Nursing World

September 1959

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IN THIS ISSUE

COVER: As Thelma Ingles, R.N., M.A., explains in her article, "The Patient, the Student, and the Teacher" (page 9), once the teacher understands herself, she can help the student toward self-understanding. The student, in turn, having reached this self-understanding, is enabled to comprehend the feelings and reactions of her patients. On this month's cover, student Susanne Weber, under the guidance of her instructor, Emily Campbell, instructs a group of diabetic patients. Her apparent ability to communicate effectively with her patients indicates that the student has reached an understanding of herself, her feelings and reactions.

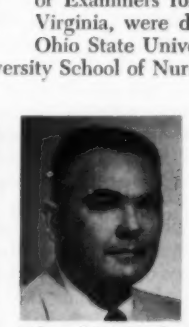
Thelma Ingles, R.N., M.A., discusses the relationship of "The Patient, the Student, and the Teacher" on page 9. A graduate of Massachusetts General Hospital School of Nursing, Miss Ingles received a B.A. degree from the University of California at Los Angeles and an M.A. degree from Western Reserve University; she has also studied at Duke University. Miss Ingles has served in many nursing positions, including those of Director of Nurses, Admiral Bristol Hospital, Istanbul, Turkey, and educational director of the University of Virginia School of Nursing.

"A Comparison of Collegiate Admission Requirements for Nursing and Nonnursing Students" (page 12) is the first article in a three-part series based on the study, "The Achievement of Students in the General Nursing Program in Basic Liberal Arts Courses at Hunter College," conducted by Kathleen K. Guinee, R.N., Ph.D. For the past nine years Dr. Guinee has been assistant professor, Hunter College of the City of New York, Department of Education, Division of Nursing Education. She is a graduate of St. Vincent's Hospital School of Nursing in New York City and holds a B.S. degree from Teachers College, Columbia University, an M.A. degree from New York University, and a Ph.D. from Fordham University.

Frances McKenna

Frances McKenna, R.N., M.A., who describes "The Clinical Assignment Pattern" on page 15, is a graduate of the Youngstown (Ohio) Hospital School of Nursing and holds a B.S. degree from Teachers College, Columbia University, New York City, and an M.A. degree from Western Reserve University in Cleveland, Ohio. Among the positions she had held before becoming educational consultant to the Board of Examiners for Registered Nurses, State of West Virginia, were director of the School of Nursing of Ohio State University in Columbus, Ohio, and dean of the Baylor University School of Nursing in Waco, Texas.

Vernita L. Cantlin



Edward F. Cantlin

A new department, "Legal Facts for Proper Practice," appears on page 17. Vernita L. Cantlin, R.N., M.S., and her husband, Edward F. Cantlin, LL.B., will co-author this monthly feature. Mrs. Cantlin, a graduate of The Dalles (Oregon) Hospital School of Nursing, received her B.S. and M.S. degrees from the University of Pennsylvania. While serving as a Flight nurse in Italy during World War II, she met Mr. Cantlin and they were married on the Isle of Capri. Mr. Cantlin received his undergraduate and legal education at the University of Pennsylvania. He is a member of the firm of Hinkson and Cantlin, engaging in general practice of law in Chester, Delaware County, Pennsylvania.

Marguerite M. Martin, R.N., author of "The Oral Hypoglycemic Agents," (page 26) has written several articles about diabetes for nursing journals. Two of her articles, "Pill for Diabetes" and "Camping for Diabetic Children," appeared in NURSING WORLD during 1958. Mrs. Martin is a graduate of St. Joseph's Hospital School of Nursing in Willimantic, Conn.

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NURSING WORLD

REPORTS

Graduate Education Need

The 1959 Edition of *Facts About Nursing*, published by the American Nurses' Association, in its compilation of statistical information about the nursing profession during 1957, reveals that although most nurses enrolled in higher educational programs are former graduates of diploma programs who are studying for baccalaureate degrees, enrollment in master's programs increased by 6.5 per cent between 1956 and 1957. It states also that 38 per cent of the students in 1957 were on full-time schedules; in 1956, 32 per cent carried full-time schedules of courses.

The A.N.A. points out that the fact that most nurses are pursuing higher education on a part-time basis and that there is a continuing shortage of nurses prepared for positions requiring graduate education emphasize the need to extend the traineeship programs.

The new edition of *Facts About Nursing* may be obtained at $2 per copy from the American Nurses' Association, 10 Columbus Circle, New York 19, N. Y.

Artificial Respiration Method

The American Red Cross has officially adopted the "mouth-to-mouth" method of artificial respiration, and this method will be taught immediately in Red Cross first aid and water safety courses.

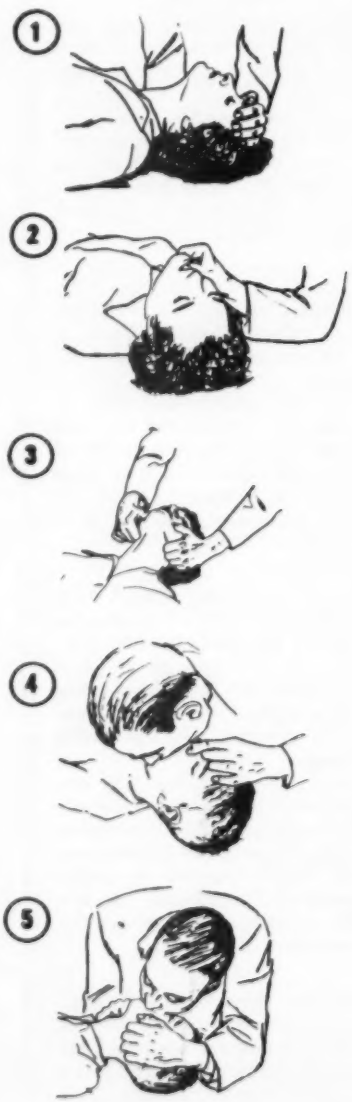
The method, as described by the American Red Cross and illustrated on this page, is as follows:

"1. If there is foreign matter visible in the mouth, wipe it out quickly with your fingers or a cloth wrapped around your fingers. Tilt the head back so the chin is pointing upward (Figure 1). Pull or push the jaw into a jutting-out position (Figures 2 and 3). These maneuvers should relieve obstruction of the airway by moving the base of the tongue away from the back of the throat.

"2. Open your mouth wide and place it tightly over the victim's mouth. At the same time pinch the victim's nostrils shut (Figure 4) or close the nostrils with your cheek (Figure 5). Or close the victim's mouth and place your mouth over the nose (not illustrated). Blow into the victim's mouth or nose. (Air may be blown through the victim's teeth, even though they may be clenched.)

"3. Remove your mouth, turn your head to the side, and listen for the return rush of air that indicates air exchange. Repeat the blowing effort. For an adult, blow vigorously at the rate of about 12 breaths per minute. For a child, take relatively shallow breaths appropriate for the child's size, at the rate of about 20 per minute.

"4. If you are not getting air exchange, recheck the head and jaw position. If you still do not get air exchange, quickly turn the victim on his side and administer several sharp blows between the shoulder blades in the hope of dislodging foreign matter."



Expect Traineeship Approval

The bill to extend traineeships for professional nurses (S. 731) and for public health personnel has been reported to the full Senate by its Committee on Labor and Public Welfare. It is expected that there will be early approval of the bill; the appropriation of sufficient funds to meet the needs for the traineeships and administration of the program is being urged.

To speed the operation of the program once the bill has been approved, nurses interested in securing traineeships for the upcoming school year are being encouraged to apply now to the schools of their choice.

India's Health Efforts

Lillian Bischoff, now an associate professor at the University of Boston School of Nursing, recently returned from India where she had spent six-and-a-half years as nursing consultant to the Indian government and to the United States International Co-operation Mission to India. Her job was to help design a program for upgrading nursing education and to widen the scope of health measures.

According to Miss Bischoff, India's major health problems are tuberculosis and communicable diseases, including smallpox, cholera, and dysentery. She states that "although the Indian government has taken active initiative and leadership in promoting health programs on the national, state, and local levels, she is fighting a total war against man's common enemies of disease, ill health, poverty, and ignorance."

Pointing to India's proud and independent spirit, Miss Bischoff states that India would rather borrow from the United States or from the world bank than accept free "gifts." American industrial investments in India

can help more than any one thing to raise the country's living standards, Miss Bischoff feels. She also thinks that the United States can offer much more assistance through the enlargement of educational exchange programs and direct fellowships for training doctors, nurses, public health engineers, teachers, technical industrialists, and administrators.

Miss Bischoff believes that all of India's health problems will be eradicated eventually by the provision of safe water, sanitation, control of malaria and filaria-carrying mosquitoes, proper food to prevent malnutrition, and facilities for prevention and treatment of communicable diseases. The latter would be accomplished through the establisment of health centers.

A.N.A. Section Membership Guide

The American Nurses' Association is currently preparing an informal guide to aid members in deciding on their proper section membership. Publication of the guide is expected by early fall.

In the guide will be criteria the A.N.A. member or prospective member should use in selecting her correct section; membership clauses for section rules; and definitions of such terms as "associate membership," "active membership," and "employed in nursing."

In districts and states where there are not enough members to enable the formation of a section or branch, the A.N.A. urges its members to set up informal local groups of members of the national sections, so that two-way communications can be carried on with the national sections.

The A.N.A. Board of Directors approved plans for the guide at a spring meeting, on the recommendation made by the Special A.N.A. Committee to Explore Questions re Clarification of Section Membership.

Health Conference

The Greater New York Association of Industrial Nurses, Inc., will be the hostess group for the Eighth Annual Health Conference of the New York State Association of Industrial Nurses, to be held in New York City between Nov. 6 and 8.

Margaret Smith, first vice-president and chairman of the education committee, is preparing educational programs for all day Friday, Nov. 6, and Saturday morning, Nov. 7. On Saturday afternoon Ruth Whitfield will preside at the annual business meeting, at which the newly elected officers will be announced.

That evening, Fannie Hurst, author and lecturer, will be guest speaker at the association's banquet. Speaking at the breakfast meeting on Sunday morning will be Caroline Simon, secretary of state for the State of New York.

Chairman of the conference, which will be held at the Commodore Hotel, is Elizabeth Van Steenburgh. The registration fee is $3.00.

New Sutter Towers Director

Rosemary Fager was recently appointed director of nurses at Sutter Towers, formerly Maimonides Hospital, in San Francisco, Calif. The hospital is a private center for long-term care, physical medicine, and insured rehabilitation.

Mrs. Fager, a graduate of St. Mary's School of Nursing in Quincy, Ill., was previously supervisor of the nursing service office of Mount Zion Hospital Medical Center in San Francisco.

Far East Director

Lorraine E. Meyer has replaced Muriel Amdahl as Far East director of the American Red Cross Nursing Services. Miss Amdahl has returned to the United States for reassignment.

In her new position Miss Meyer will train military dependents who are former nurses to be instructors of Red Cross nursing courses, and she will enlist retired registered nurses in the Red Cross disaster reserve program in the Far East.

A member of the Red Cross Nursing Services since 1951, Miss Meyer has served as chief nurse at the Kansas City, Mo., Red Cross Defense Blood Center during the Korean War and as Red Cross nursing representative for Kansas. She is a graduate of the Omaha School of Nursing.

Nursing Director Named

Esther Ann Nelson was recently named as director of nursing service at Doctors Memorial Hospital in Minneapolis, Minn. She had formerly been on the faculty of the University of Minnesota School of Nursing and a director of nurses in the state hospital system.

Miss Nelson trained at hospitals in Rochester, Minn., and St. Paul, and she holds a bachelor's degree and a master's degree from the University of Minnesota. She will be in charge of an expanding nursing department at Doctors Memorial.

University of Michigan Appointment

Alice Marsden, presently assistant professor of nursing at Adelphi College, Garden City, N. Y., has been appointed assistant professor of psychiatric nursing at The University of Michigan School

(*continued on page* 30)

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NURSING

AS OTHERS SEE IT

by SHIRLEY HOPE ALPERIN, R.N.

A recent article about hospital care, "Hospitals *Can* Give Patients a Break," in *Look* magazine is in sharp contrast to an article critical of hospital care that *Look* published in a February issue earlier this year. (See NURSING WORLD, April 1959.)

The complimentary article in the July 7 issue of *Look* is written by Leon Lewis, M.D., a lecturer in medicine at Stanford University School of Medicine, and Rose L. Coser, Ph.D., assistant professor of sociology at Wellesley College.

Nurses Receive Most Complaints

The article reports that the nursing staff appears to be on the receiving end of most of the complaints. The authors point out the unfairness of this because frequently, they say, the nurse herself is disappointed or frustrated in her job of caring for the sick.

An important observation made by Drs. Lewis and Coser is that many patients do not differentiate between the professional worker and the nonprofessional; some people assume that any woman in a white uniform is a nurse. To help clarify this situation the authors describe the different types of nursing personnel, including the registered nurse, practical nurse, aide, and volunteer.

According to the *Look* article, the shortage of nurses—a major complaint of patients—which began with World War II, necessitated the training of nonprofessionals to fill the duties formerly carried out by registered nurses. "A recent survey on nursing care concluded that today's nurse sees less of her patient in the flesh and more of him on paper," cite the authors. "The survey points out that professional nurses spend more time keeping records than they do on nursing patients." Being away from the bedside is frustrating to many R.N.'s who remark that this type of nursing is "the only true, soul-satisfying work." When asked about this, one nurse commented: "Many of us are bitter over separation from patients, particularly since some of our most sacred duties have been given to others—some of whom are grossly unprepared."

The article attributes the nursing shortage to the long training period, the inadequate salaries, and the lack of satisfaction the professional nurse receives from her job. It lists the average weekly salary of the general duty nurse as ranging from $57.50 to $72. The highest-paid nursing personnel—all with college degrees—such as teachers and supervisors, receive an average of $90 per week.

The authors describe one solution to the nursing problem which was offered by Edith Aynes, a nursing educator and former major in the United States Army Nurse Corps. Miss Aynes stated that a clear distinction ought to be made between training and education for nurses. She recommended a two-year intensive course for women interested solely in bedside nursing.

Further Study

Miss Aynes said that R.N.'s aspiring to administrative and supervisory positions should enroll in the four or five-year college program, and that further study for nursing leaders and educators should be available in graduate schools. Miss Aynes said she believed that the different levels of nursing, with separate salaries and aims, would be more appealing to nurses who have different professional goals.

The authors assert that the return of the registered nurse to the bedside cannot resolve all the dissatisfaction encountered in hospitals. Not only physical changes are needed, but also a change in attitude on the part of the hospital staff. Drs. Lewis and Coser note that in many institutions, especially those that are tradition-bound in discipline and old techniques, the patient experiences a severe loss of identity. On admission, people are expected to conform to unusual routines, often beginning with confinement to bed which in some instances is unnecessary.

Individuality Destroyed

The individuality of a patient is often destroyed because he is forced to become too dependent upon the hospital staff, the article asserts. Instead of encouraging the sick to participate more actively, doctors and nurses often assume the entire responsibility of their patients. One nurse described a cooperative patient as one "who lies quietly in bed and accepts anything that is done for him without questions." According to the authors this attitude is unfortunate because studies have disclosed that regardless of the skilled medical care administered, the recovery of a patient will be retarded if he does not take an active interest in his care. They believe that patients should be told what is wrong with them (unless it is medically unwise), as well as the functions of the various treatments they receive.

"The adoption of the team approach would mean recognizing each patient as an individual," reports the article. Under this program, doctors, nurses, therapists, social workers, and psychologists work together as a unit, utilizing their special skills in treating the patient both physically and emotionally.

In institutions where the concept of teamwork has been used, particularly in rehabilitation centers (Dr. Lewis is director of the Respiratory and Rehabilitation Center at Fairmont Hospital in San Leandro, Calif.), the results have been remarkable. Such hospitals stress the usefulness of a patient rather than the nature of his illness. "Many chronic patients become helpless invalids because modern concepts of care have not been used," the authors declare. "The patient should be constantly encouraged to participate actively in his recovery and to make the fullest use of whatever abilities he still has." The principles of care applied in rehabilitation centers would be helpful in general hospitals.

Changes in nursing procedures are also mentioned in the *Look* article. To increase exercise for the bedridden, the authors recommend a foot board at the base of every bed and a trapeze bar above the bed. They admit that this equipment would entail additional expense, but they also point out that when a patient can help himself the nursing staff can attend to more pressing duties.

The article lauds the few hospitals that have attempted to introduce new techniques and enlightened concepts of patient care. The authors conclude: "Patients can receive the benefits of modern medicine that most hospitals are now equipped to provide, and still be treated as human beings."

Knowledge and attitudes—one is as important as the other in giving good nursing care. But students must first be helped to know themselves before they can best aid the patient. In addressing a group of nurses and allied health workers at the VA Hospital in Knoxville, Iowa, the author discussed some problems in the care of patients with chronic illness and factors influencing the nurse's perception of such patients.

Instructor Emily Campbell watches as student nurse Susanne Weber instructs a group of diabetic patients at Duke Hospital on the nature and treatment of the disease.

the Patient, the Student, and the Teacher

by **THELMA INGLES, R.N., M.A.**
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FOR people who care, there can be no more wonderful feeling than watching a sick person get well. It is a particularly wonderful feeling for those who have made a contribution to the patient's recovery. The patient who comes to the hospital with an acute illness may have a spectacular need for help. Forces are mobilized for immediate action; every detail of care is seen as a life or death matter. Oxygen, transfusions, emergency medications, consultations—all are exciting aspects of care. When the crisis passes and the patient recovers and goes home cured, the staff can say with pride, "We saved this patient's life." This can be a most rewarding experience.

"The Best Kind of Patient"

Dr. T. F. Main once wrote: "When a patient gets better it is a most reassuring event for his doctor and nurse . . . cured patients do great service to their attendants. The best kind of patient is seen as one who from great suffering and danger of life or sanity responds quickly to a treatment that interests his doctor and thereafter remains completely well; but those who recover only slowly or incompletely are less satisfying. Only the most mature of therapists are able to encounter the frustration of their hopes without some ambivalence towards the patient, and with patients who do not get better, or who even get worse in spite of long devoted care, major strains may arise."[1]

The patient with a chronic illness, because of the very nature of his illness, may cause considerable strain in his medical attendants. This patient may get better, but he does not always get well and go home cured. Measurement of successful therapy in terms of maintaining the status quo, or even in terms of improvement, may not produce the same sense of gratification as does a cure. Many nurses become impatient, frustrated, discouraged, even irritated by the patients who permit them less than complete success.

The response of nurses to chronically ill patients is dependent in large measure on the kind of orientation they received as students to the whole subject of chronic illness. Young students must be helped to find satisfying experiences in caring for patients who do not have the physiological or psychological capacity for responding wholeheartedly to a therapeutic regimen. The nurse may encounter many problems in caring for the chronically ill patient, and she may need help in coping with them. Let us look at some of the factors which may influence her perception of a patient with chronic illness.

A primary factor is the age of the patient; if a child of six is given a diagnosis of leukemia or schizophrenia, the response of the nurse may be highly emotional. To her, anything that interferes with the normal growth and development of a child reflects tragedy. Regardless of whether she personally has lived a happy life, the nurse sees the child as an individual who deserves the opportunity to begin life without a handicap. Reverence for youth is part of our American culture; if the patient is a man of 70 the impact is not the same—he has lived a long time already, he has had his chance with life. The young student may also see the aged patient as an example of that part of her future life which she doesn't want to accept. She may reject patients who personify the aging process.

Another important factor is the response of the family to the patient's diagnosis. If the family displays grief because of the diagnosis, the student may become very anxious and assume some of the family's grief. Several years ago, I spent a period of time in a hospital in Istanbul, Turkey. One of my most difficult problems there was helping students survive grief situations in the hospital. If the patient or family cried, the students cried; if the patient or family screamed, the students screamed. The students liter-

[1]T. F. Main, M.D., "The Ailment," *British Journal of Medical Psychology*, Vol. 30, Part 3 (1957), pp. 129-45.

ally joined the family group and accepted their travail and grief as their own.

Sometimes I had to take hysterical students from patients' rooms. When I tried to talk with them about the nurse's need to maintain self-control, they labeled me as hard-boiled, as not caring that such a terrible thing had happened to the patient. Now, when I think about this, I wonder if they were right. In their culture perhaps the nurse's overt demonstration of caring helped patients and families. Perhaps my stoical efficiency was perceived as hard-boiled, as not caring. I wonder, too, if some American patients and families might not see nurses' tears as symbols of caring. It is also possible, of course, that others might see them as intrusion.

Socioeconomic Status

The socioeconomic status of the patient is another factor which influences the nurse's perception of a chronically ill patient. The majority of nurses come from middle-class families. They have not had a surplus of material things, nor have they suffered from great poverty. In working with the rich or highly educated patient, the student may feel uncomfortable and reticent in offering support. Because the patient has money, intelligence, education, the nurse may feel that he and his family are capable of meeting the problems of the diagnosis by themselves, not needing or wanting support from the nurse.

On the other hand, some students may have difficulty in recognizing and working with problems of the poor, the less intelligent, the less well-educated patients. Some students become quite angry with this group, judging them critically, branding them as lazy and indigent. The young nurse who makes her first home visit to a poor family may come away with feelings of disgust, thinking that there is just no excuse for people living in such poor circumstances.

Other students may become so emotionally involved with these poor families that they want to take over, to plan and manage the family affairs.

Still another factor in the student's perception of patients results from the fact that various chronic diseases may have various meanings to different nurses. The nurse's response to the problems of an illness will be colored by her past experience with the disease. If the patient has a disease with which the nurse has had a personal involvement either through a family member or a friend, she will see the diagnosis in the light of her experience. If, for instance, she has had an experience with an alcoholic who did not respond to therapy, she may look upon other alcoholics with pessimism. If she has seen a patient with cancer suffer a long course and finally die, she may see future patients with cancer as doomed, and consider care as futile.

Also, the meaning of the specific disabilities produced by various illnesses will be different for each nurse. Illnesses produce diverse problems: limitation of motion and locomotion, loss of adequate respiratory or circulatory function, the production of an altered body image, and interference with communication and proper mental function.

The young nurse who sees physical activity as a vital part of life may feel depressed with patients afflicted with paralysis, arthritis, Parkinson's disease, or multiple sclerosis. The patient who is unable to do things in a natural way may produce a feeling of frustration in this nurse; she may find it difficult to be patient with this person's cumbersome activity. She may set her expectations for rehabilitation higher than the patient can realistically achieve, and then join the patient in feeling discouraged as he fails to realize success.

Patients with illnesses that produce loss of adequate respiratory function can be disturbing to the nurse, for the patient who is unable to breathe properly is a frightened and a frightening patient. The student nurse may feel real anxiety in caring for a patient with acute asthma because his struggle for air may be seen as his struggle for life.

Occasionally the student's sense of inadequacy in helping the asthmatic patient may cause her to reject the patient. I remember one student who told me she hated to take care of asthmatic patients. When asked the reason for this she replied, "It seems so silly for patients to have asthma. They could stop breathing this way if they really wanted to. Everybody knows asthma is psychological . . . all they have to do is relax." In questioning her further I learned that one of her first patients had been an asthmatic and that she had been extremely frightened by this patient. Furthermore, she had gotten into trouble with the medical staff for failure to carry out properly the therapeutic regimen.

The Cardiac Patient

Students rarely reject the patient with heart disease; the heart has poignant significance. This patient is seen as having legitimate reason for almost any kind of behavior. Students do, however, sometimes have difficulty in dealing with this patient's reaction to his therapy. They want the patient to maintain his diet because they want him to get better, and they understand the rationale and meaning of diet in terms of the progress of his disease.

But patients often have great difficulty with a low-sodium or low-fat diet. A student may feel real urgency in convincing the patient that he must stay on a diet, and she may become irritated when the patient breaks the dietary rules. Other nurses for whom food has particular significance may feel very sympathetic with the patient on a restricted diet. I remember one student who said, "I just can't work with patients on low-salt or low-fat diets. I am a true Southerner and would rather die than eat my string beans without salt pork."

Many students have great difficulty in handling patients who have illnesses which alter the body image. For example, the young student may find it very hard to care for patients who are incontinent. She may consider excreta as a foul and dirty substance. I once asked a class of freshman students: "What are some of the accepted func-

Carmen Enz, a student at the Duke University School of Nursing in Durham, N. C., reads aloud a letter from a friend of the patient who has undergone eye surgery.

tions of the nurse which you believe should be performed by other personnel?" Seventy-five per cent of the students said carrying bedpans should be done by nonnursing personnel. If the nurse has strong feelings about feces, she may very easily transfer to incontinent patients her repulsion while caring for them.

Young students may also have problems in caring for patients with skin disease. A single pimple on her own face may be a source of embarrassment for the student. A patient with pemphigus who may be covered with "pimples" may be very hard for her to accept, despite the fact that the disease causing the lesions is not contagious. Students are generally unanimous in saying that they least prefer patients with dermatological conditions.

Students usually respond sympathetically to patients who have illnesses which interfere with sight or speech. These patients elicit tenderness and a wish to help. Loss of sight or loss of speech is considered sad. In general, however, patients with deafness do not elicit this same response; patients who can't hear well often irritate the nurse. Having to shout in order to communicate may make the nurse irritable and frustrated. Patients who can't hear well often respond to their disability with this same irritation and frustration and thus further antagonize the nurse.

Patients whose contact with reality is limited or altered may frighten students, regardless of whether these patients are on a medical ward or a psychiatric ward. To speak and get an appropriate, anticipated response promotes a safe feeling in the nurse. To speak and get no resopnse or an inappropriate or bizarre response can produce considerable anxiety. The student knows she has communicated well only when she gets the right response. No response or a wrong response disturbs her; she feels out of contact, that she has lost control of her patient.

A young multiple sclerosis patient enjoys a change of scenery as she sits on the lawn with student Elizabeth Wheeler.

Family response to the patient's diagnosis may influence the nurse's perception of the patient. Here student Elizabeth Thompson comforts a patient's worried wife.

Help for Students

The points discussed above are meant to emphasize the belief that students must first of all be helped to understand themselves, their own feelings and reactions, before they can understand the feelings and reactions of their patients and play a helping role with them. In large part we have been so concerned with helping patients that we have overlooked this very necessary intermediate step. Students, as well as their patients, are individuals with fears, anxieties, likes, and dislikes. Their behavior with patients will necessarily arise out of the context of their own personalities. Students need help in becoming aware of their own areas of sensitivity, hostility, and insecurity; they need help in learning how to handle their feelings before they can work effectively with patients.

Help for Teachers

In our present schools of nursing, faculty members are feeling the pressures and tensions brought about by the changing role of the nurse. It was easier to teach nursing 20 years ago: The curriculum was concerned largely with teaching scientific facts, procedures, and routines. For example, the psychiatric nurse was taught how to restrain a manic patient, how to put a patient in a tub or a hot pack, how to protect patients and herself from harm. Very little was offered to nurses about meeting psychological needs.

The same was true in teaching the care of patients with medical or surgical problems. Teaching the student the preparation of a patient for surgery, for instance, meant teaching the importance of the enema, specific preoperative medication, and how to shave the surgical area. Not much time was given to meeting the psychological needs of the patient or family. If these were met, they were met intuitively by the nurses.

Today increasing emphasis is being placed on the nurse's responsibility for helping patients with their psychological problems. Many faculty members whose orientation to patient care was primarily in physical care are feeling quite insecure in teaching the mental health aspects of nursing. They feel threatened by these new concepts and insecure in handling them. Often they are able to do little more than give lip service, using such phrases as listen to your patient, offer support, give reassurance. They offer this instruction without being able to vitalize the meaning of listening, supporting, and reassuring.

We have noted that students need help in understanding themselves before they can understand patients. Similarly, many faculty members need help in understanding themselves before they can understand students.

A great deal of time, effort, and money has been spent for the integration of mental health concepts into the basic curriculum. Perhaps more time, effort, and money need to be provided for helping present-day nursing faculty and service personnel gain experiences which will at least keep them *au courant* with students. As long as students are taught a philosophy of nursing that differs from that which they see being practiced, conflict is inevitable.

A Comparison of Collegiate Admission Requirements for Nursing and Nonnursing Students

Is it necessary to have lower entrance standards for nursing students entering baccalaureate programs than for nonnursing students entering baccalaureate programs? The author investigated this as part of her study, "The Achievement of Students in the General Nursing Program in Basic Liberal Arts Courses at Hunter College." This study will be presented as a series of three articles.

by **KATHLEEN GUINEE, R.N., Ph.D.**
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IN some colleges and universities the academic admission requirements for nurses entering baccalaureate programs are less demanding than the requirements for students who are to follow other fields of baccalaureate study. This seems to imply that nursing students are less able to fulfill the usual admission requirements. Is this policy necessary or desirable? It was this question that prompted a study at Hunter College of the City of New York, a liberal arts college that includes among its curricula several programs of a preprofessional or professional character.

At Hunter candidates for Bachelor of Science degrees in the various curricula may be admitted with somewhat different high school qualifications, and it was recognized that the stated admission requirements for the students entering the General Nursing Program, leading to the degree of Bachelor of Science in Education with a major in nursing, differed from admission requirements for students entering other baccalaureate programs.

Purpose and Background

One of the purposes of the study was to examine the admission records of 157 matriculated students in the General Nursing Program in the 1956-57 college year to determine how certain admission qualifications of the students in the General Nursing Program compared with those of students admitted to the other baccalaureate programs at Hunter College.

Of these 157 students in the General Nursing Program, 70 per cent graduated from high schools in New York City and 8 per cent from high schools in New York State outside of New York City; 22 per cent graduated from high schools in states other than New York. Pennsylvania and New Jersey contributed the largest groups of out-of-state students with 15 and 8 students, respectively.

All of the 157 students had attended diploma schools of nursing for three calendar years. Eighty-eight per cent of the 157 students were graduates of schools in New York City, 3 per cent were graduates of schools of nursing in New York State outside of New York

TABLE 1

HIGH SCHOOL UNITS OF MATHEMATICS PRESENTED ON ADMISSION BY STUDENTS ENTERING THE GENERAL NURSING PROGRAM, FALL 1956 AND SPRING 1957

			Units Presented	
Units	N	Cumulative Number	Per Cent	Cumulative Per Cent
2½	86	86	55	55
2	50	136	32	87
1½	8	144	5	92
1	11	155	7	99
0	2	157	1	100
Total	157		100	

TABLE 2

HIGH SCHOOL UNITS IN FOREIGN LANGUAGES PRESENTED ON ADMISSION BY STUDENTS ENTERING THE GENERAL NURSING PROGRAM FALL 1956 AND SPRING 1957

Units	N	Cumulative Number
7	1	1
6	17	18
5	34	52
4	32	84
3	37	121
2	31	152
1	3	155
0	2	157
Total	157	
Mean	3.7	
S. D.	1.44	

City, and 9 per cent graduated from schools of nursing in states other than New York. The majority of the students in the General Nursing Program held full-time day positions in nursing and attended Hunter College School of General Studies in the evening.

The General Nursing Program is designed for residents of New York City who are graduates of three-year diploma programs in state-accredited schools of nursing. They must have satisfactory records at their hospital schools of nursing and be licensed as registered professional nurses in New York State. Matriculated students must have attained a satisfactory rating on the National League for Nursing graduate nurse qualifying examination which includes the American Council on Education Psychological Examination. A satisfactory high school record covering the following 16 units[1] is required: English, 4; science, 2; American history, 1; mathematics, 1; foreign language, 2 (if not covered in high school, this requirement is to be met by one year in college with credit toward the degree); electives approved by the Committee on Admissions and Standing, 6 to 8 units.

Applicants for baccalaureate programs other than nursing also present 16 high school units, of which 11¾ are required units, as compared with the 8 to 10 required units for applicants for the General Nursing Program. The English and American history requirements are the same for both groups. The applicants to the General Nursing Program are required to present one unit more of science, one and one-half units less of mathematics, and one to three years less of a foreign language than applicants for other baccalaureate degree programs. Candidates for the General Nursing Program may present six to eight elective units, whereas only three to four and one-half elective units may be offered for admission to other baccalaureate programs.

Comparison of Admission Qualifications

The examination of admission records of 157 students entering the General Nursing Program during the college year 1956-57 showed that all students presented 16 units of high school work. These included four units in English, one unit in American history, and two units in science. The quantity and the quality of electives presented by students in the General Nursing Program did not differ significantly from those presented by freshmen entering other majors. Mathematics and foreign languages were the two areas in which there were significant differences in fulfilling admission requirements between students entering the General Nursing Program and students entering other baccalaureate programs at Hunter College.

In Table 1 is seen that more than one-half (55 per cent) of the 157 students had the same number of units in mathematics required for students entering other baccalaureate programs. Eighty-seven per cent of the 157 students had two or two and one-half units; the remaining 13 per cent had one and one-half units or less in mathematics on admission.

Table 2 shows that more than three-quarters (77 per cent) of the 157 students met the foreign language requirement (3 units) for students entering other baccalaureate curricula. Of the 157 students, 53.5 per cent had foreign language credit in excess of this requirement.

High school averages were computed by taking a general average of all academic subjects, omitting special subjects. Table 3 shows the distribution of high school averages for Hunter College freshman, Fall 1956, and students entering the General Nursing Program, Fall 1956 and Spring 1957. Students entering the General Nursing Program are admitted with advanced standing credit and are therefore not included in the freshman statistics.

A comparison of the high school averages shows that both the median (83.5) and the mean (83.7) of the high school

TABLE 3

GRADE AVERAGES OF HIGH SCHOOL ACADEMIC SUBJECTS FOR HUNTER COLLEGE FRESHMEN FALL 1956, AND STUDENTS ENTERING THE GENERAL NURSING PROGRAM, FALL 1956 AND SPRING 1957

High School Average	College Freshmen		General Nursing Students	
	n	cum %	n	cum %
95	2	.2		
94	6	.8	1	.6
93	19	2.9	3	2.5
92	19	4.9	2	3.8
91	26	7.6	5	7.0
90	22	10.0	6	10.8
89	47	15.0	4	13.4
88	46	19.9	8	18.5
87	64	26.6	7	22.9
86	55	32.5	8	28.0
85	47	37.5	9	33.8
84	68	44.7	4	36.3
83	96	54.9	12	43.9
82	71	62.4	9	49.7
81	52	67.9	15	59.2
80	75	75.9	6	63.1
79	64	82.7	11	70.1
78	53	88.3	8	75.2
77	36	92.1	9	80.9
76	20	94.3	7	85.4
75	23	96.7	5	88.5
74	18	98.6	7	93.0
73	7	99.4	3	94.9
72	3	99.7	2	96.2
71	2	99.9	4	98.7
70	0	99.9	2	100.0
69	0	99.9		
68	0	99.9		
67	1	100.0		
Number	942		157	
Median	83.5		81.97	
Mean	83.7		82.26	
S. D.	4.8		5.66	

[1]One unit represents the amount of work in that subject usually completed in one year in an accredited secondary school.

TABLE 4

ACE GROSS SCORES FOR HUNTER COLLEGE FRESHMEN FALL 1956, STUDENTS ENTERING THE GENERAL NURSING PROGRAM FALL 1956 AND SPRING 1957, AND NATIONAL NORMS

ACE Gross Score	Hunter College Freshmen		Entering GNP		National Norms*
	n	cum %	n	cum %	cum %
176-180					
171	2				
166	2				1
161	1	1			1
156	2	1	1	.7	2
151	9	2	3	2.8	2
146	16	3	3	4.9	4
141	32	7		4.9	6
136	43	11		4.9	10
131	71	13	1	5.6	14
126	63	26	4	8.3	19
121	87	35	7	13.2	25
116	85	44	8	18.7	31
111	99	54	8	24.3	39
106	101	65	8	29.9	47
101	93	75	14	39.6	54
96	67	82	11	47.2	62
91	63	89	18	59.7	69
86	45	94	20	73.6	75
81	28	96	19	86.8	80
76	17	98	16	97.9	85
71	10	99	1	98.6	88
66	4	100	1	99.3	91
61		100	1	99.9	93
56	1	100			95
51		100			96
46		100			97
41		100			98
36		100			99
31	1	100			99
Number	942		144		42,314
Median	112.57		98.00		103.02
Mean	113.01		99.04		101.78
S. D.	18.50		18.85		26.70

*National norms listed in this table are based on 42,314 freshmen in 211 four-year colleges as adapted from ACE Manual, 1945 Edition, Bureau of Publications, Wash., D.C.

averages for the Hunter College freshmen were above the median (82.0) and mean (82.3) for the students entering the General Nursing Program. The difference in the means of the two groups is statistically significant at the 1 per cent level of confidence.

The distribution of the American Council on Education Psychological Examination total scores attained by 144 of the 157 students[2] admitted to the General Nursing Program, 942 students admitted to other majors at Hunter College, and national norms for 42,314 college students are shown in Table 4. The difference between the mean ACE gross score of the students entering the General Nursing Program (99.0) and the mean ACE gross score of other students entering Hunter College (113.0) is statistically significant at the 1 per cent level of confidence. The mean ACE gross score of the students entering the General Nursing Program (99.0) more nearly approximated that of the national mean (101.8) for entering freshman.

[2]Where total does not equal 157, information was not available.

Discussion

The comparison of certain admission qualifications of 157 students in the General Nursing Program with those of students admitted to other baccalaureate programs at Hunter College showed that the majority of the 157 students included in this study presented admission qualifications beyond the stated requirements for admission to the program leading to the degree of Bachelor of Science in Education with a major in nursing. The areas of greatest differences were foreign languages and mathematics. In mathematics only 13 per cent of the 157 students lacked more than a half unit of the mathematics required for entering majors other than nursing. Only 23 per cent of the group lacked one or more of the three units of foreign languages required for students entering other baccalaureate curricula.

The difference between the mean of the ACE gross scores of students entering the General Nursing Program and the mean ACE gross scores for other students entering Hunter College is statistically significant; however, the mean of the ACE gross scores of the students entering the General Nursing Program compare more favorably with the national mean for entering freshmen.

Although there were differences in the stated admission requirements, the existing differences between the admission qualifications of students entering the General Nursing Program and the freshmen entering Hunter College at the same time to study other majors did not seem to be of sufficient magnitude to justify different admission standards for students entering the General Nursing Program. It was therefore recommended that the same high school admission requirements be used for students entering the General Nursing Program as for students entering other baccalaureate programs at Hunter College, and as of September 18, 1958, all students entering the General Nursing Program are required to meet the same high school requirements. At the end of two semesters the number of admissions has not decreased and no hardships to applicants have been reported.

It is suggested that in colleges and universities where different admission standards for nurses exist, there be a reexamination of the admission qualifications of nurses to determine if they have qualifications which are comparable to those required for students entering other majors. In setting admission requirements care should be taken to prevent the impression that nurses need special consideration and that their basic high school qualifications differ from those of students entering other baccalaureate majors. If nurses are granted the same degrees as other students, it follows that they should meet the admission requirements quantitatively and qualitatively.

During a medical conference, instructor Mary Ellen Brown and her class at the Ohio Valley General Hospital School of Nursing in Wheeling, W. Va., discuss the care of patients with myocardial infarction. Students also have clinical practice in this area.

The Clinical Assignment Pattern

Synchronization of the rotation pattern and clinical teaching provides students with the opportunity to learn and demonstrate their abilities in each area of study and practice.

by **FRANCES McKENNA, R.N., M.A.**
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THE assignment of students to the hospital for practice in clinical nursing has one major purpose: to provide learning opportunities in a real situation. Placed in an active hospital environment, students are encouraged and assisted in vitalizing and implementing the knowledge, understandings, skills, and appreciations gained in class, conference room, and laboratory.

It is the responsibility of the faculty to plan and arrange the students' practice assignments according to sound educational concepts and to establish a pattern of related learning experiences within each clinical area. This, of course, is the curriculum, which must of necessity be consistent with the purposes and objectives of the school.

Commonly referred to as "rotations," the clinical assignment pattern serves as a framework for nursing content. Whatever form it takes, each segment will

1. Contribute to the objectives and advance the purposes of the program as a whole.
2. Represent progression and increasing difficulty.
3. Bear a direct and logical relationship to those segments preceding and following it.
4. Contain definite content. Clinical teaching and practice can be made concurrent, and other courses placed in a desired relationship—prerequisite or parallel. For example, the faculty might decide that a course in child development should precede pediatrics, in which case each student would come to the area having had the course. On the other hand, it might be decided that child development should be taught at the same time, i.e., parallel. Child psychology and marriage and the family are also subjects in point.
5. Carry approximately the same number of instructional hours, thereby providing relatively even distribution of load throughout the program.
6. Occupy the same, or approximately the same, amount of time.

Time Allocation

A clinical assignment pattern might be called an engineering problem, or more simply, a problem in mechanics or methodology. To be functional it must consist of a series of equal or nearly equal time periods or blocks, which permit flexibility and easy manipulation. They allow for the division of a class into groups and ready movement according to an established schedule. Thus within a given period, say a year, a class will have had the same teaching and practice; only the sequence will differ.

There are several ways in which the total time period may be divided. But first the faculty will want to consider the size of classes, the number of faculty and their preparation, and the clinical resources available. Clinical material should be sufficient to assure teaching content, together with learning and practice opportunities within each established time unit. Limited clinical resources, such as pediatrics, and the availability of typical problem-solving experiences should be studied carefully.

If the school includes practice assignments away from the home hospital (affiliations) they may complicate planning. There are two problems: the length of the assignment, and the dates each experience begins and ends. Clinical blocks should not exceed 12 weeks, since longer periods impose added vacation responsibilities on the home school. It is easy to see that 4 thirteen-week periods provide unbroken coverage for the year. In addition, dates may

QUARTERLY PATTERN

Figure 1

GROUP I

FALL
Obstetrics
WINTER
Medical-Surgical Nursing 3
SPRING
Pediatrics
SUMMER
Vacation
Medical-Surgical Nursing 4
(two consecutive units)

GROUP II

FALL
Pediatrics
WINTER
Obstetrics
SPRING
Medical-Surgical Nursing 3
SUMMER
Medical-Surgical Nursing 4
Vacation
Medical-Surgical Nursing 4

GROUP III

FALL
Medical-Surgical Nursing 3
WINTER
Pediatrics
SPRING
Obstetrics
SUMMER
Medical-Surgical Nursing 4
(two consecutive units)
Vacation

Figure 2

GROUP I

Obstetrics
Pediatrics
Medical-Surgical Nursing 3
Medical-Surgical Nursing 4
Vacation

GROUP II

Pediatrics
Obstetrics
Medical-Surgical Nursing 3
Medical-Surgical Nursing 4
Vacation

GROUP III

Medical-Surgical Nursing 3
Medical-Surgical Nursing 4
Obstetrics
Pediatrics
Vacation

GROUP IV

Medical-Surgical Nursing 3
Medical-Surgical Nursing 4
Pediatrics
Obstetrics
Vacation

Pediatric nursing instructor Betty Horstman, left, helps student Susie Kay Gehrig to relate class discussion about bathing to the care of a young hospital patient.

make special arrangement of content for the fragmented periods (quarters overlapped) at each end necessary. Nor are consecutive twelve-week blocks a solution. They do not change the fact of unbroken coverage, and they obstruct the maintenance of a relatively uniform school calendar from year to year.

There are other factors involved. The physical arrangement of the clinical practice areas in the hospital must also be investigated, including grouping of services, especially if segregated; conditions conducive to good clinical teaching and good nursing care; and availability of conference space on the divisions.

The hospital nursing service pattern should also receive careful study. The number of professional and nonprofessional staff, the quality of nursing performance, and the probable effect of unevenness in student assignments should be taken into account. Classes vary in size, and numbers are affected by drop-outs, illnesses, and leaves of absence. The plan would not be adjusted as these occur.

It goes almost without saying that the same pattern will not be equally useful and workable in all schools. Basically there are three patterns: quarterly, trimester and semester.

The Quarterly Pattern. Several variants are possible in a quarterly arrangement. The school year can be divided into three 12-13 week sessions (a few days between each quarter are most useful) and the summer into a four-week vacation and an 8-9 week practice assignment. And if two self-contained four-week units are planned for the latter, teaching can be easily duplicated, and instruction and practice kept the same for all. Figure 1 shows the way groups can be divided if the experience planned for the second year were obstetrics, pediatrics, medical-surgical nursing 3, and medical-surgical nursing 4. This arrangement really amounts to a double rotation each year, one within three quarters, and one in the summer, which also allows 3 four-week vacation periods.

Another arrangement could be 4 twelve-week periods, and four weeks of vacation. This way students and faculty would be on vacation the same four weeks and the school closed for that time. The class can be divided into four groups with teaching and practice balanced for each section. If desired, the class might be divided into halves for a two-quarter unit of maternal-child health (see Figure 2).

The quarterly pattern can also be divided into 4 eleven-week periods. This allows four equal blocks for in-

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Legal Facts for Proper Practice

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AS she entered the operating room suite, Miss Evans looked forward to another satisfying and rewarding day of duty. In the six months since she had reluctantly accepted a transfer to the operating room to help meet the acute nursing shortage there, she had become a valued member of the surgical team. Although Miss Evans' operating room experience was limited, her performance demonstrated the maturity of judgment and sense of professional responsibility which she had developed in 10 years of practice as a registered nurse in fields other than surgical nursing.

Irritated by Implication

Therefore, when the operating room supervisor called Miss Evans into her office and asked her how she had handled the specimens in the diagnostic D & C operation performed by Dr. Larson four days ago, she was not in the least concerned. But she did feel somewhat irritated by the implication that she was expected to remember the details of this specific case. After all, Dr. Larson was chief of the gynecological service at the hospital and he and several other surgeons on the staff performed such operations regularly.

Miss Evans herself assisted in six or eight of these operations a week and the case in question had apparently involved only the standard routine that was in effect in that hospital with respect to minor operative procedures.

For this particular operation a scrub nurse had set up the instruments and linen, but did not assist while the procedure was being carried out. Miss Evans, as circulating nurse, had provided all the required nursing assistance during the operation. She prepared the surgery data slip, recorded the preoperative diagnosis, helped the anesthetist and the surgeon as needed, took care of the specimens, and performed all the other usual duties of a circulating nurse. Dr. Larson had made no complaint about her technique during the operation. In fact, the supervisor said he had described it as consistently good. Why then this interrogation by the supervisor?

Briefly, the patient had shown a positive "Pap" smear in the course of a routine annual physical examination by her family physician. He, as an ethical practitioner, recommended that a diagnostic D & C and cervical biopsy be done to rule out carcinoma, or to identify it for purposes of prompt treatment if it were present. The patient, informed of the implications of the positive "Pap" smear, readily consented.

While the scheduled procedure was limited to a diagnostic D & C and biopsy of the cervix, the surgeon, because of the observations he had made after the patient was anesthetized, took biopsies from the labial lip and the vaginal wall, in addition to taking the biopsy of the cervix and curetting the endometrium. The total number of specimens to be sent to the pathology laboratory was four. However, when the laboratory report was received it described only two—the biopsies of the labial lip and of the vaginal wall. The pathologist insisted that those were all that had been received in the laboratory. The pathology sheet which the surgeon filled out, and which accompanied the specimens to the laboratory, listed the four which the surgeon had taken. But in the operating room specimen book only the specimens from the labial lip and the vaginal wall had been recorded as being sent to the pathology laboratory.

The staff nurse who was responsible for checking all specimens against the applicable pathology sheets and recording them in the operating room specimen book could not remember the particular specimens involved. Furthermore, she did not have any explanation as to why she had not made a prompt investigation when the pathology sheet mentioned four specimens although she apparently had been able to locate only two—the ones she had entered in the specimen book.

Obviously, the procedure as originally scheduled had to be redone. This involved a duplication of expense and it subjected the patient to unnecessary emotional strain, inconvenience, and the physical risks of a second anesthetization and surgery. Something had gone wrong which should not have gone wrong and, as usual, the patient suffered the immediate harm.

The operating room supervisor was interrogating Miss Evans for a twofold purpose. Naturally, she wanted to ascertain whether any of the personnel assigned to the operating room had been negligent. Even more important, she wanted to know whether the prescribed routines, policies, and procedures then in effect were inadequate and in need of review and revision. While the supervisor had long since given up hope of completely eliminating human error and failure, she knew that a well-designed system of checks and safeguards, if consistently adhered to, would do much to minimize and neutralize the adverse effects of those errors and failures on the health and well-being of the patient.

Verification

Accordingly, the supervisor asked Miss Evans whether she had verified the identity of the specimens taken by the surgeon by asking him specifically to examine them and the description she had written on the cups in which she had placed them before the patient was taken from the operating table. This was prescribed procedure and the supervisor knew that if it had been followed the surgeon must have verified the fact that four specimens, properly labeled, were in the specimen

cups at the conclusion of the operation. The supervisor's further investigation could be directed to the handling of the specimen cups after completion of surgery.

Miss Evans repeated what she had said before, that she could not recall this particular operation but that she was certain that any specimens taken by the surgeon had been properly handled by her. She added: "I feel very certain, however, that I did not question Dr. Larson about the specimens. After all, I've been a practicing registered nurse for 10 years, and in the past six months I've handled the specimens of probably 150 diagnostic D & C's. I don't have to ask the surgeon to show me what constitutes a specimen, or how to describe it. It would waste my time and his, and it is insulting to my experience and intelligence that you would expect me to do so as a routine procedure. Naturally, if I had felt any uncertainty regarding the specimens, I would have questioned the surgeon. However, I'm quite sure that I did not, for that would have been unusual enough to make me remember the case."

The supervisor did not pursue the matter any further at this time, since other things required her immediate attention. However, as she asked Miss Evans to return to her assigned duties, she remarked: "If the patient presses a claim, your failure to adhere to prescribed procedures in handling those specimens may prove embarrassing to you."

Miss Evans had a normally busy day with little time to reflect upon the problem of the lost specimens. But as she was on her way home that afternoon, on impulse, she called a lawyer she knew, one who had looked after a number of things for her family, and when she found he could see her at once, she went directly to his office. Concisely, but completely, she described the situation to the lawyer and asked him to tell her whether anything in what she had told him would make her legally liable in any way.

Proud of Status

The attorney said that her question was rather broad, adding that he could see she was proud of her professional status and took her responsibilities quite seriously. The attorney said that he'd try to answer the question, but necessarily in somewhat general terms. He said: "When you accepted a position with the hospital, you entered into what the law calls a contract, which is nothing more or less than a legally enforceable agreement. The other party to that contract was the hospital—not your supervisor, or the surgeons, or the patients you might attend. Your legal obligations under that contract are owed to the hospital. If you failed to carry them out fully you were guilty of a breach of contract. This would give the hospital the legal right to discharge you for cause."

He noted the nurse's admission that she had failed to follow prescribed procedure when she failed to check with the surgeon regarding the number and identity of the specimens he took. The fact that she might have located and identified all specimens properly, he said, was not sufficient to excuse her breach of lawful instructions, nor was the fact that the nurse may have had justification for feeling that the instructions were unnecessary, or even stupid, as long as they did not require something illegal or unethical. Whether she would be subject to discharge for cause was largely within the discretion of the employer, who normally considers all the circumstances in deciding whether the errant employee should be discharged or merely needs guidance and perhaps reprimand.

The attorney went on to say that in addition to subjecting her to discharge, the nurse's failure to carry out lawful instructions might make her legally liable to reimburse the hospital for any loss or expense it could show that it suffered as a direct result of that failure. But he remarked that at that time it did not appear that the hospital suffered financial damage as a result of the loss of the specimens: The hospital was a nonprofit institution which, in that state, was not responsible to patients for the harm suffered from the negligence of hospital employees.

"The rule is otherwise, however, with respect to hospitals operated for the profit of their owners or stockholders," he added, "and in some other states even the nonprofit hospitals are responsible to the patient for any loss or damage suffered as a result of the negligence of a hospital employee—professional or nonprofessional—in the performance of duties within the scope of the employee's assignment."

Although Miss Evans did not have to worry about financial responsibility to the hospital under the facts of the case, the attorney warned the nurse that she might be faced with a claim on the part of the patient. He explained that while she was not employed or paid by the patient, Miss Evans would be liable to her if, as a result of the nurse's negligence, the patient suffered injury or loss. Negligence has been defined as a lack of due care under the circumstances. If it could be shown to the satisfaction of a jury that the nurse lost the specimens because of her failure to do what a reasonably prudent nurse of her training, experience, and status would normally have done, the nurse might be required to compensate the patient for the damage she had suffered as a result of the loss of the specimens. This would include the full costs of the second operation, as well as reimbursement for any lost earnings during the period of the second hospitalization and convalescence, and a reasonable monetary allowance for the unnecessary pain and discomfort suffered by the patient.

"I do not mean to imply," the attorney declared, "that a jury would necessarily, or even probably, conclude that the specimens were lost as a result of your neglect. Certainly the bare fact that you failed to follow prescribed hospital practice in the handling of the specimens does not establish that you were the person who lost them. If, as you say, your training and experience made the surgeon's verification unnecessary, and you placed all the specimens he took, properly labeled, on the specimen shelf or wherever they were supposed to be placed for transmission to the laboratory, your violation of instructions with respect to verification was harmless as far as the patient was concerned, and unless she suffered harm at your hands, she has no cause for action against you."

What the Jury Believes

The attorney went on to say that according to the facts the nurse had given him, the jury might believe that the surgeon took the four specimens he says he did, and that the specimen nurse found only two on the specimen shelf. If further testimony were produced to the effect that the surgeon handled the missing specimens in the proper manner—not that he absentmindedly threw the sponges on which he placed them into the kick-bucket—and that no one disturbed the specimens after Miss Evans put them on the specimen shelf, she might be found liable if the jury believed that testimony.

"On the other hand," he said, "the jury may be skeptical of the surgeon's recollection as to how he handled the specimens and of the specimen nurse's insistence that only two were on the shelf when she went to make up the day's delivery for the laboratory." The attorney added that if the specimen nurse was so careful, why did she not notice, when she matched the specimens to the appropriate pathology sheet, that the sheet described four? Why also did she not inquire why an operation scheduled as a D & C with biopsy of the cervix produced neither of the two specimens normally incident

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Advances and Trends in

DRUG THERAPY

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More About the Oral Hypoglycemic Agents

In the August issue the story of the discovery of oral hypoglycemic agents was reviewed. Two chemical groups, the sulfonylurea compounds and the biguanides, were compared and their future in the control of diabetes mellitus was considered. While it is too early to make more than a preliminary evaluation of the place of the sulfonylureas and the biguanides in the management of diabetes, there is no doubt that their introduction has stimulated renewed research not only in the therapy of diabetes mellitus but in the disease itself. In this issue the criteria for selecting suitable patients for therapy with the oral hypoglycemic agents and the postulated mechanism of action of these drug groups will be considered.

Since the sulfonylurea compounds are effective only in certain middle-aged and elderly diabetic patients, it was necessary, early in the use of these drugs, to develop methods by which patients could be selected properly. The proposed methods included clinical trial, evaluation of the type of diabetes with particular reference to ketosis, and the sulfonylurea response test.

The most direct method of testing is simply to start the patient on the drug and to observe closely the behavior of the urine and blood sugar. It is taken for granted that the patient has been and is following a diet restricted in carbohydrates and adjusted in calories at a level designated to provide body weight that is satisfactory for age and height of the patient. If the patient has been on a restricted diet without insulin, the patient is given 1 to 3 Gm. of tolbutamide (Orinase) or the appropriate dosage of any other sulfonylurea compound. Three grams may be given daily for two days, then 2 Gm. for another two days, and finally a maintenance dose of 1 Gm., daily, is used for a prolonged period. It has been noted that with responsive patients, 1 Gm., daily, will usually be sufficient; at times the dosage may be as low as 0.5 Gm., daily.

If the patient has previously been taking insulin, the attempted transition to tolbutamide must be watched closely, lest control of the diabetes be lost and acidosis follow. It is best to have these patients in the hospital during the trial on tolbutamide. In any case, the amount of insulin may be reduced by 10 to 25 per cent every second or third day until it can be ascertained whether tolbutamide will be effective. If tolbutamide is only partly effective and insulin must be continued, it is best to return to the full dose of insulin, since combined insulin-tolbutamide treatment would appear to offer little or no advantage.

Duncan, Lee, and Young have proposed that patients be selected for tolbutamide therapy depending upon the ease with which they develop ketosis. They suggest withdrawing insulin in hospitalized patients and determinating the number of hours it takes before diacetic acid and acetone appear in the urine of the patient. Tolbutamide is considered contraindicated in patients who develop significant ketonuria within eight hours. In patients who do not develop ketonuria within 24 hours oral treatment may be attempted with a reasonable assurance of success. The objections to this method of selecting patients are the need for hospitalization, the temporary disturbance in the diabetic condition due to withdrawal of insulin, and—in inexperienced hands—the possible hazard of ketoacidosis to the patient.

The sulfonylurea response test is being utilized in patients whose insulin requirement is small, 12 units or less, daily. Insulin is omitted entirely for two days prior to the test day. If the insulin used prior to this time has been protamine zinc, NPH, lente, or globin, crystalline zinc insulin is substituted. In this way there is no carry-over of the insulin effect on the test day. On the day of the test insulin and breakfast are omitted. Blood is obtained for sugar determination; 3 Gm. of tolbutamide are given by mouth; and blood is obtained for determination of sugar content four hours later.

After this is accomplished the test is terminated and food may be given to the patient. If the test is performed as an office or out-patient procedure, the patient must be asked to wait for an hour or so until the blood sugar values have been reported. If the response to tolbutamide has been satisfactory, the patient may be asked to begin on the following day with a maintenance dose of 1.0 Gm., daily, before breakfast. If the results of the test have been unsatisfactory, an appropriate dose of insulin is given before the patient leaves the physician's office or the out-patient clinic. In this way disasters from acidosis and diabetic coma can be avoided in patients who have not responded to tolbutamide.

Simplest Rule

The simplest rule to follow in interpreting the sulfonylurea response test is that the blood sugar, regardless of its initial height, should fall to normal within four hours after the administration of 3 Gm. of tolbutamide. If this occurs it can be predicted with a reasonable degree of accuracy that the patient will respond satisfactorily to tolbutamide on maintenance doses.

It is true that with some individuals the maximum effect of a single large dose of tolbutamide may not be seen until six to eight hours after administration. Such patients would be missed in the four-hour test and, therefore, might not be selected for oral treatment. The number of such patients, however, is not large. Although the four-hour test is by no means completely reliable, it is probably the most satisfactory and convenient test. As a screening procedure in selecting patients for tolbutamide therapy it has proved to be extremely useful.

Late in 1957 a survey was made of the results of tolbutamide treatment in the Joslin clinic. Of a selected group of 772 patients, good control of hyperglycemia and glycosuria was obtained in 407 or 52.7 per cent of the cases; fair control, in 143 or 18.5 per cent. The number of patients with primary failure (within the first month of treatment) was 136 or 17.5 per cent; 40

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patients or 5.2 per cent had secondary or late failures. It is unlikely that any of the secondary failures were due to disregard of diet. There were 33 patients or 4.3 per cent on whom the drug had been used for less than one month and 8 patients or 1.03 per cent on whom tolbutamide was discontinued for nonmedical reasons.

Tolbutamide was successful in patients with the maturity-onset type of diabetes (onset over the age of 40) and those having a low daily insulin requirement, less than 20 units. The age of onset of diabetes was found to be of much more relative importance than the age of the patient when given tolbutamide or the duration of diabetes. The amount of insulin was more significant than the period of time over which the insulin had been taken.

The incidence of side effects was low—1.1 per cent. They consisted chiefly of urticaria and minor digestive disturbances, although leucopenia or agranulocytosis have also been encountered. Determinations of liver function were carried out with 392 patients over the course of a year. No consistent or important abnormality was found except in the case of the alkaline phosphatase test. Here, determinations done a month after starting the drug showed a slight rise, averaging one Bodansky unit. The significance of this finding is not clear.

Theories About the Mechanism of Action

Intensive investigation into the action of the sulfonylureas is now being carried on throughout the world. One of the first theories proposed and abandoned for lack of evidence was that damage to the alpha cells of the pancreas resulted in inhibiting the production of glucagon. A second mechanism suggested is that of increased utilization of glucose by peripheral tissues through a direct insulin-like action, but thus far the weight of evidence is against this idea. The sulfonylureas do not appear to be substitutes for insulin and *in vitro* they do not seem to act on insulin-sensitive tissues to increase glucose uptake and utilization. In animals and man, the presence of a pancreas capable of producing insulin seems to be essential for the action of the sulfonylurea compounds.

Some data have been presented to suggest that the sulfonylureas inhibit the action of insulinase but the evidence is not clear-cut and this would not appear to be the answer to the problem. The sulfonylureas do not seem to oppose directly the action of the hypophysis, adrenals, thyroid, or gonads; the sulfonylureas remain active in the absence of these glands.

There is much evidence supporting the concept that the sulfonylureas stimulate the production and/or release of insulin from the beta cells of the pancreatic islets. The drugs are ineffective in the depancreatized animal or man. Sulfonylureas are generally ineffective in diabetic children and in adults with the unstable juvenile type of diabetes. Diabetes in both instances is believed to be a result of the inability of these persons to produce insulin. While a high percentage of children with diabetes of recent onset will experience a definite fall in blood sugar following a single large dose of carbutamide or tolbutamide, this effect is uncommon in those who have had diabetes for four or five years or more. Further evidence suggesting that the sulfonylureas stimulate the pancreas is the fact that an increase in the insulin-like activity of blood is obtained from the pancreatic vein following the administration of these drugs.

If the sulfonylureas stimulate the pancreas and exert their action through endogenous insulin, it should be possible to observe and measure the various known metabolic effects of insulin. However, experience to date has been disappointing. Following the administration of carbutamide or tolbutamide there is no rise in respiratory quotient, no increase in the arterial-venous glucose difference, and no increase in serum phosphate following glucose. As a possible explanation it has been suggested that perhaps the quantities of insulin released from the pancreas in response to the sulfonylureas is so small that metabolic effects of the type just mentioned, although present, are so slight that they escape measurement.

Many investigators have supported the theory that the sulfonylureas decrease the rate of release of glucose from the liver by inhibiting the co-enzyme systems. But it would be rather hazardous to draw final conclusions from such studies. A major effect of the sulfonylureas would appear to be that of inhibition of hepatic glucose synthesis or release; it may be agreed that this action is benign and favorable, since one of the features of diabetes is instability of material stored in the liver with excessive formation and subsequent release of glucose into the blood from both carbohydrate and noncarbohydrate sources.

The sulfonylurea compounds probably act both by stimulating the production and/or release of insulin and inhibiting glucose formation in the liver or its release from the liver. More exact information awaits further study.

Selecting Patients

According to recent clinical reports, virtually all classes of patients with diabetes respond to treatment with DBI, with or without injected insulin. This includes not only those patients who respond to other oral hypoglycemic agents, but also the stable adult diabetic not controlled by diet alone, juvenile and adult "brittle" diabetics, the insulin-resistant and the insulin-responsive patient, and the primary and secondary sulfonylurea failures.

A satisfactory response to DBI is evidenced by reduction in blood and urine sugar levels and relief of the symptoms of diabetes. In the juvenile or adult "brittle" diabetic, DBI often permits better regulation of the diabetes with insulin and helps to prevent the peaks and valleys of ketoacidosis and hypoglycemic reactions.

Oral hypoglycemic agents, including DBI, are not recommended in treating diabetes mellitus when it is the mild adult form that can be regulated by diet alone or juvenile diabetes, uncomplicated and well regulated with insulin. Nor should it be used in the presence of acute complications such as diabetic acidosis, coma, infection, and surgery, when insulin is indispensable.

In discussing over two years of experience in the clinical study of DBI, Pomeranze reported that in a total of 206 diabetic patients without regard for age, duration of the disease, or classification of the diabetes, 110 were successfully treated with DBI alone and an additional 18 were successfully regulated with DBI and a 50 per cent or greater reduction of daily insulin requirement. Of the total group, 53 patients required discontinuation of DBI therapy because of gastrointestinal side effects.

Although it is clear that DBI may be used in the management of stable adult diabetes, its importance in diabetic management is re-emphasized. DBI is an effective agent for supplementing the effect of insulin in the care of the "brittle" diabetic patient. At no time, however, is it intended as a replacement for insulin in this type of diabetes.

Although many investigators agree that DBI may facilitate significant reductions in the previous insulin requirement in juvenile and in "brittle" diabetic patients, it must be pointed out that when patients are relatively poorly controlled on small doses of insulin, just the addition of DBI to approximately the same insulin requirement has often led to stabilization in the regulation of diabetes. Therefore it becomes increasingly important that the dosage of DBI be adjusted specifically to the requirements of the individual diabetic patient. This rule applies not only in the more severely labile patients but also for all other diabetics.

Unger demonstrated that DBI has no pharmacodynamic effects other than its hypoglycemic action, except perhaps for slight but sustained adrenergic blockade in anesthetized cats at doses above 10 mg./kg., intravenously.

Employing radio-tagged DBI to study tissue distribution and excretion in fasted rats, Wick noted that nearly all of the administered dose of DBI was eliminated in the urine within 24 hours. Most of it was excreted before the twelfth hour, suggesting that DBI does not accumulate in the tissues. Prior to excretion, DBI is distributed primarily in the gastrointestinal tract—following the hypothesis of Brodie on the gastric reconcentration of basic drugs—and in the liver.

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PROTAMINE ZINC INSULIN — HORMONE

DESCRIPTION: Protamine zinc is a sterile suspension in a buffered aqueous medium of insulin that is modified by the addition of zinc chloride and protamine. The protamine is prepared from the sperm or from the mature testes of certain genera of fish. The preparation contains 0.20 to 0.25 mg. of zinc and 1.0 to 1.5 mg. of protamine for each 100 U.S.P. units of insulin.

ACTION AND EFFECTS: PZI has a slower onset of hypoglycemic action, as compared to regular or crystalline types of insulin. PZI's action becomes maximal at four hours and continues for 24 hours or longer. Its effects are especially apt to become manifest, however, during the night hours furthest removed from the last intake of food.

USES: PZI has been most often employed in the control of adult diabetics because this preparation is best fitted for use in those patients whose total insulin requirement is not too high, 20 to perhaps 60 units per day. It is also best used in those patients whose postprandial hyperglycemia is not marked.

In children and in adults a mixture of protamine zinc insulin and crystalline or amorphous insulin is very effective in controlling glycemia occurring after meals or during the night. Combined or separate injections given at one time provide 24 hours of control.

PREPARATIONS: Protamine zinc insulin is available in concentrations of 40 to 80 U.S.P. insulin units per milliliter of the injection.

ADMINISTRATION AND DOSAGE: To secure accuracy of dosage, the preparation must be brought into uniform suspension by carefully shaking it before use.

This insulin is usually given before breakfast, though the action is essentially the same even if given before supper. In using protamine zinc insulin it is generally desirable to divide the diet unevenly, providing a smaller breakfast intake of preformed carbohydrate and a substantial before-bedtime feeding that contains 25 or 35 Gm. of carbohydrate. Insulin pellets, protamine zinc insulin, and cholesterol implanted in alloxanized rabbits have been reported to provide adequate control of the diabetes for 100 days. In a similar test in seven patients, 10-50 years of age, who were previously maintained on 40 to 180 units of protamine zinc insulin daily, the pellets controlled three patients adequately with only moderate hyperglycemia and glycosuria, and permitted the use of decreased insulin dosages in others.

TOXICITY: Toxicity from PZI is the same as with any preparation of insulin when given in excessive dosage.

PRECAUTIONS: In using the combination of protamine zinc insulin and crystalline or amorphous insulin in one syringe, it must be remembered that protamine zinc insulin is prepared with an excess of protamine to prevent dissociation of the insulin-protamine complex. This means that when premixed with regular or crystalline insulin in a bottle or syringe, or when injected into one site, some of the rapid and short-acting insulin is converted to protamine zinc insulin. Hence, if the effect of the regular or crystalline insulin is to be obtained, it must be used with the protamine zinc form in proportions of 2:1 or higher. This is obviously not a problem when, as in some clinics, the two insulins are administered in separate sites.

Whenever the insulins are given in one syringe the regular should always be withdrawn first, to avoid contamination with protamine zinc insulin. Introduction of some regular insulin into the protamine zinc insulin which may occur with this sequence is inconsequential.

GLOBIN INSULIN — HORMONE

DESCRIPTION: Globin zinc insulin injection is a sterile acidic solution of insulin modified by the addition of globin, derived from beef hemoglobin and zinc chloride. The solution also contains phenol or cresol and glycerin and has a pH of 3.4 to 3.8. It contains 3.6 to 4.0 mg. of globin and 0.25 to 0.35 mg. of zinc per 100 U.S.P. units. The properties of the mixture are not modified by the addition of more globin.

ACTION AND EFFECTS: The onset of action of globin insulin is intermediate between that of regular insulin and the protamine zinc insulins. Its peak effect is manifested at 10 to 14 hours, with the duration of action approximately 18 hours—again between that of the regular and the protamine zinc insulins.

The action of globin insulin is like that of any other insulin preparation. This hormone facilitates the entry and phosphorylation of glucose within the cells. The glucose-6-phosphate formed in this process can then enter the glycolytic cycle or the hexose monophosphate shunt, thus producing high-energy phosphate and pyruvic acid, or it can be polymerized into glycogen after conversion to glucose-1-phosphate. Insulin also facilitates the interconversions within the Krebs cycle, permitting the utilization of oxaloacetate formed from pyruvate by condensation with acetyl CoA derived from fatty acids for the generation of further amounts of high-energy phosphate.

USES: Satisfactory use of globin insulin has been reported in many adult clinics. It can be mixed with regular insulins, and has been used this way in the treatment of juvenile-type diabetes.

PREPARATIONS: Globin zinc insulin injection, U.S.P., is bioassayed in rabbits and is marketed in concentrations of 40 and 80 U.S.P. insulin units per milliliter of injection.

DOSAGE AND ADMINISTRATION: This preparation, as the others, is administered by subcutaneous injection. As already noted, it may be administered and mixed with regular insulins.

TOXICITY: A summary of the findings in insulin shock or hypoglycemia may be of value. Coma may or may not be present. The state may occur suddenly in a previously well diabetic. It may also occur in the poorly regulated and especially in "brittle" diabetics.

It is usually not ushered in by infection; omission of food intake or increased physical activity may be antecedents. Intercurrent infection or emotional upset may interfere with food intake, and hypoglycemia may occur before meals. There is aglycosuria or mild glycosuria and ketonuria, but one must guard against confusion with urine formed earlier. The blood sugar is low if measured promptly, but hypoglycemia symptoms may follow relative rather than absolute decrease. The respirations are normal or shallow. Tachycardia accompanied by sweating occurs with rapid-acting insulin but not with the longer-acting types. The face is pale, and there may be convulsions.

PRECAUTIONS: Insulin dosage must be adjusted. The symptoms of hypoglycemia yield almost immediately to the intravenous injection of dextrose unless organic changes in the brain have already occurred.

The hypoglycemia syndrome terminates in coma and death. The majority of the signs and symptoms of insulin hypoglycemia appear to originate in the central nervous system, and the actions of insulin at this site have been extensively investigated. There is little doubt that the hypoglycemic syndrome is due largely to decreased cerebral utilization of oxygen.

These patients respond to glucose therapy but this may be slow, especially in severe shock such as that with long-acting insulin.

LENTE INSULIN — HORMONE

DESCRIPTION: Lente insulin is a mixture of minute particles consisting of approximately 70 per cent crystalline zinc insulin and 30 per cent amorphous zinc insulin. Each component has a sufficiently high zinc content to make the mixture relatively insoluble at the pH of the blood. The trade name for lente insulin is Lente Iletin.

ACTION AND EFFECTS: The compound provides an antidiabetic action that, timewise, is between unmodified (regular) insulin and protamine zinc insulin. The time of action of lente insulin so closely approximates that of the unmodified protamine zinc insulin, isophane (NPH) insulin, that they can be used interchangeably. The onset of action of lente insulin is sufficiently prompt to control the after-breakfast rise in blood sugar, and its duration is usually adequate to maintain blood sugar levels during fasting without the need for supplementary injections.

USES: Lente insulin is used to control diabetes mellitus. Research to determine whether it is preferable to the present insulins is still being conducted.

PREPARATIONS: This drug is available as a suspension or injection in 400 or 800 U.S.P. units in 10 cc.

DOSAGE AND ADMINISTRATION: Lente insulin differs clinically from unmodified insulin only in its more prolonged action in lowering the blood sugar; its administration and dosage should follow the same principles that govern the use of insulin in general. Lente insulin is administered as a buffered suspension by deep subcutaneous injection. It should not be injected into underlying muscle, and is never administered intravenously. The container vial should be rotated and inverted several times to insure uniform distribution of the suspended particles, but vigorous shaking and frothing should be avoided. The potency is expressed in either 40 or 80 U.S.P. units of insulin per cc. The number and size of daily doses, time of administration, diet, and exercises are determined by careful observation with frequent blood sugar and urine sugar determinations in the individual patient. Usually the most satisfactory time for injection is in the morning before breakfast. In newly developed, uncomplicated cases of average severity, an initial daily dose of 10 units may be increased by 3 to 5 units until proper control of blood and urinary sugar is achieved.

In patients already under treatment with protamine zinc or unmodified insulin or both, a beginning dose of lente insulin of approximately 20 per cent fewer units may be substituted; this is increased if necessary. Patients on NPH insulin may be transferred directly to lente insulin. As with protamine zinc insulin, food intake may be advantageously divided into portions of one-fifth, two-fifths, and two-fifths, respectively, for three meals. Afternoon and bedtime feedings may become desirable or necessary in some circumstances.

TOXICITY: Toxicity from lente insulin is the same as in insulin reaction from any other insulin preparation.

PRECAUTIONS: Since lente insulin differs clinically from unmodified insulin only in its more prolonged action in lowering the blood sugar, its administration and dosage should follow the same principles that govern the use of insulin in general. Lente insulin is not adaptable for use in place of unmodified insulin in dealing with diabetic emergencies that require immediately acting intravenous insulin.

Suspensions of lente insulin should be stored in a cold place, preferably a refrigerator, but exposure to freezing or high temperature should be avoided. Vials in use should be protected from strong light and the contents used as continuously as possible. A partially empty vial not used for several weeks should be discarded, and a vial in which the precipitated suspension has become clumped or deposited on the wall of the container should not be used.

NPH INSULIN — HORMONE

DESCRIPTION: NPH, known also as isophane insulin injection, U.S.P., is a modified protamine zinc insulin. It is essentially a preformed, stable insulin mixture. The N denotes that it is a neutral solution with a pH of 7.2; the P signifies that it contains protamine zinc insulin; the H means that the preparation originated in Hagedorn's laboratory. It contains 0.50 mg. of protamine per 100 U.S.P. units of insulin.

ACTION AND EFFECTS: The onset of action of protamine zinc insulin takes between 6 and 8 hours. Its period of maximum action occurs within 12 to 24 hours, and its duration of action is from 48 to 72 hours. Early preparations of insulin were relatively crude and were often likely to produce local reactions. However, they were absorbed fairly slowly and exerted their action over many hours. As methods for the isolation and purification of insulin improved, the resulting preparations were more rapidly absorbed and their duration of action decreased. Frequent administration of relatively small doses was then necessary to maintain relatively normal blood glucose levels. Efforts were therefore made to devise technics to delay insulin's absorption and prolong the duration of its action.

A major advance in delaying the absorption and hence prolonging the duration of action of insulin was made by Hagedorn and his associates in 1936. By permitting insulin to react with the basic protein, protamine, they prepared a protein complex, protamine insulin. The isoelectric point of this complex is at pH 7.3; therefore it is relatively insoluble in body fluids. When the complex is injected subcutaneously in an aqueous suspension it dissolves slowly at the site of deposition, and the insulin is absorbed at a retarded but steady rate.

USES: It is often difficult to maintain a constant blood sugar level with regular insulin because it is too rapidly absorbed and destroyed. In severe cases of diabetes, therefore, insulin must be administered several times a day. During the night the blood sugar rises and in the morning glycosuria is common. A modified insulin such as NPH in the hands of a skillful practitioner can overcome these disadvantages.

Due to a slower and more constant rate of absorption, modified insulins exert their effects for 18 to 24 hours or more. The objective in using such a preparation as NPH is to reduce the number of injections to one daily injection and to maintain a more constant blood sugar concentration. The total amount required is slightly less than that of regular insulin.

PREPARATIONS: Isophane insulin, or NPH, is marketed in concentrations of 40 and 80 units per milliliter.

DOSAGE AND ADMINISTRATION: The moderate complexities and limitations of using combinations of protamine zinc and regular insulin resulted in the production of a new protamine or NPH insulin (isophane), originally designated NP 50, which in essence manifests the effect of a 2:1 mixture of crystalline and protamine zinc insulins. It is supplied as a clear solution to be administered by subcutaneous injection.

TOXICITY: As with any other insulin preparation, overdosage of the drug results in what is termed an "insulin reaction." Diabetic patients usually know when they have had an excessive amount of the insulin; they are generally tremulous, apprehensive, and feel the need for food.

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THE BOOK SHELF

by ANNA V. MATZ, R.N., B.S., M.A., M.P.A.
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Orthopedic Nursing Procedures, by Avice Kerr, R.N., B.A., Springer Publishing Company, Inc., New York, 1959. 364 pages. Price $4.75.

One's first impression of this book is that it is merely an outline of tested nursing procedures used in the care of ambulatory and bed patients with orthopedic disabilities. But the book has a fund of instructive material. However, the format and arrangement in outline form are difficult to follow in some of the sections.

The chapter on fractures and those on the use of the various mechanical appliances in the care of orthopedic patients are presented clearly and precisely.

This is a source book that will serve as a quick reference for professional and practical nurses engaged in work with patients who are suffering from orthopedic defects.

Vocational Rehabilitation for the Physically Handicapped, by Louise M. Neuschutz: Forewords by Winthrop M. Phelps, M.D., Medical Director, Childrens Rehabilitation Institute for Cerebral Palsy, Baltimore; Consutlant in Cerebral Palsy for the States of New York, New Jersey, Delaware, Maryland, Pennsylvania, and others; and K. Vernon Bonta, Technical Adviser to the President's Committee on Employment of the Physically Handicapped, Charles C. Thomas, Publisher, Springfield, Ill., 1959. 136 pages. Price $5.75.

Vocational rehabilitation has received much emphasis since the war; physical disability causes intense mental anguish as well as characteristic emotional problems. To guide a person to achieve independence and to help him conquer the disastrous effects of a disability requires great effort on the part of the person himself, encouragement from his family and friends, and proper guidance from physicians, nurses, and guidance counselors. When this occurs, it represents a spiritual victory.

This book is written to help the disabled person find himself and to redirect his energies to a type of employment suited to his disability. The contents are divided into three parts. Part I, The Main Type of Physical Handicaps, contains Chapter 1. The Cardiac; Chapter 2. The Orthopedically Handicapped and the Cerebral Palsied; Chapter 3. The Deaf and Hard of Hearing; Chapter 4. The Blind and Partially Sighted; Chapter 5. The Arrested Tuberculous; Chapter 6. The Elderly and the Aged. In Part II are Chapter 7. Rehabilitation Centers; Chapter 8. Hiring the Handicapped; Chapter 9. Avoiding Accidents on the Job; Chapter 10. White Collar Jobs for the Disabled and the Forty Plus; Chapter 11. A Business of Their Own; Chapter 12. Mail Order Business. Part III contains Chapter 13. The Homebound; Chapter 14. Home Study Through Correspondence for the Homebound.

Each chapter includes a list of suitable occupations and there are references for further reading.

This book written in lay language has a supportive appeal to the handicapped person; there are success stories of handicapped persons interwoven throughout the chapters.

Nurses and counselors working with the handicapped will find this book a useful guide in redirecting the handicapped to useful occupations.

The School Health Program, A Textbook for Teachers and for Other Professional Personnel in School Health, by Alma Nemir, M.D., Professor and Director, Division of Health Education, Department of Health, Physical Education, and Recreation; Acting Director, Student Health Service; Lecturer, Department of Preventive Medicine, College of Medicine, University of Utah, W. B. Saunders Company, Philadelphia and London, 1959. 428 pages. Price $6.00.

The health of the school child is a continuous process. This concept is accepted by educators as an important aspect of general education. For this reason, it is the teacher who plays a major role in safeguarding the health of the school child and in understanding his needs and problems.

The school health program consists of three parts: healthful school living, health services, and health education. The goals and objectievs of the various personnel involved must be understood if a sound and reasonable program of health is to be maintained. Health is more than absence of a diseased condition; it is defined as a "state of complete physical, mental, and social well-being. To promote or preserve this well-being in children of school age (six to twenty), a concept of a school health program has gradually been developed which encompasses all the health needs of the whole child. Such a program is concerned with a healthful environment, health services which aim to detect and correct or improve any health problems a child may have and health education which affords him the opportunity to learn how to live healthfully."

The author, a physician and educator, directs this text to teachers to enable them to know more about detecting and handling the health problems of school children. The first part of the book is devoted to physical growth and development and the common health problems which arise. These are instructive, and the information given is comprehensive and to the point. The second part deals with the organization and administration of the school health program, noting that the administrative patterns of organization will vary and depend on the community. All types are described and the author points out that frequently there is duplication of effort and overlapping of services. Joint efforts of all members of the school and the auxiliary personnel responsible for the health of the child are essential for the successful operation of the school health program.

The contents consists of two parts. In Part I, The School Child: His Normal Health Status and Common Health Problems, are 16 chapters: Chapter 1. Development of the School Health Program; Chapter 2. Physical Growth and Development; Chapter 3. Nutritional Status—Normal and Abnormal; Chapter 4. Posture and Feet; Chapter 5. Health Problems of Eyes; Chapter 6. Health Problems of the Ears, Nose, Throat, Mouth, and Tonsils; Chapter 7. Prob-

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THE DYNAMICS OF HUMAN RELATIONSHIPS

Let's talk it over

by **THERESA G. MULLER, R.N., M.A.**
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MUCH more has been written about what nurses should know and do than about how they might feel when carrying out a nursing assignment. Although it must be admitted that nurses do not readily reveal their innermost thoughts and feelings about what they experience, it would be difficult to estimate how unique such reticence is in nursing as compared with other fields of work. In this connection I have found graduate nursing students able to learn a good deal about themselves by keeping a record of significant daily incidents and the feelings thereby aroused.

Through reading the following excerpts selected from the daily record of a young graduate student while on a field assignment in psychiatric nursing, some of you may find clues to understanding yourselves better, while others might in this way catch a glimpse of a field of work in which you have had no experience.

Oct. 1: My first day in the field began when I reached the state hospital gate before 9:00 A.M. Previous directions to the classroom in A Building had seemed clear enough when they were given to us but I found myself bewildered when I entered the enclosed spacious grounds dotted by a number of red brick buildings in single and connected units. By following an elm-shaded walk I came to the building designated as A and walking through the front door, I asked the receptionist for further directions to the classroom.

Once in the classroom I heard a brief talk by the instructor on the physical set-up of the hospital, and then we were shown through some of the buildings. As we walked out of doors from one building to another we saw patients playing baseball and tennis. In the wards we noticed other patients quietly listening to a radio, reading books and magazines, and watching television. A few patients sat slumped in chairs, their faces hidden in their hands. When we stopped to admire the bracelets some patients were making, they were pleased to tell us that the bracelets were to be used as Christmas presents for the women patients in the hospital.

Oct. 2: Our classes this morning were concerned with the psychological approaches in meeting the needs of the mentally ill patient. Our instructor helped us to understand the methods by relating them to specific examples. I found myself particularly preoccupied with what she said about patients with suicidal tendencies.

My clinical assignment was on Ward 5, where a very busy head nurse made me feel welcome by giving me her undivided attention and telling me about the nursing needs of the patients on this service for acutely ill men of all ages. It all seemed so simple as she talked to me. With a prayer in my heart I tried to follow her instructions for the day and hoped I'd say and do only what was best for each patient. As I played ping pong with one young man, I noted another one standing idly by and asked him to take my place. He willingly did so and thanked me as he began to play. I then turned my attention to another patient who was staring into space, only to have him move away from me when I spoke to him. I was sorry about this but resolved to try again at another time. Other patients were more responsive. One elderly man told me about his crippled legs. Another wanted me to send a telegram to the President of the United States. I listened to him for a while and then got him interested in a card game.

Oct. 3: We met in the classroom to discuss the adaptation of general nursing procedures to the care of the mentally ill patient. Then I went back to Ward 5 where I observed the shock treatments and noted the differences in the procedure as it is carried out here by comparison with the way it had been done in another hospital where I first learned about it. I wondered about some of the things I saw and noted several points I wanted clarified. Even though the patients were dazed immediately following the treatment they recovered enough to go to lunch on time.

Divert Patient From Sad Thoughts

Later I played Chinese checkers with a young man who was sitting alone and aloof from others. He did not know the game but I was able to help him use what he knew about regular checkers and this seemed to take his mind off his sad thoughts.

Many of the patients listened to the radio broadcast of the first game of the World Series and clapped with enthusiasm when a favorite player made a home run. I went over to the young man who had walked away from me yesterday. This time he did not walk away but neither did he respond to my attempts to talk to him.

The head nurse cleared up a number of my questions about the patients but there were other things I needed to study on my own, and for this I found the library references available at the end of the day.

Oct. 4: We learned a good deal today about feeding problems. In addition to some of the things I did yesterday, I

assisted serving the noon meal and fed some of the helpless patients. Then I played Chinese checkers with two patients. One of them was agitated and depressed and required encouragement to make each move in the play. The other patient was hyperactive and talkative; he had to be reminded to await his turn and not to jump more checkers than was his right to play. Each patient thus reflected in his play the general characteristics of his type of illness.

Oct. 5: We observed a patient receiving Sodium Amytal therapy. He was a middle-aged man who had assumed a fetal position in bed and was mute before the treatment. During the injection of Sodium Amytal the patient extended his legs on the bed and answered to his name and the questions put to him. It was fascinating to see the changes in the patient through the administration of this drug.

Later, as I cut the fingernails of some of the elderly patients and gave foot soaks to others, I listened to each as they told about themselves. It is surprising what one can learn while doing the little things that these patients cannot do for themselves and which they appreciate having done for them.

Oct. 6: During this week I got to know a few things about the patients on A 5, and this helped me to give them the care they needed. I also began to realize that even with the specific instructions I was receiving I would have to be able to adjust myself to each situation as it arose and to the varying moods of each patient. There was an instance where I noted the flies bothering a bed patient; the ineffective fly sprayer lead me to look for some other means of exterminating the flies. Consequently, I got three fly swatters from the head nurse and interested two patients in helping me to wage war on the flies. I was pleased to see that in the fly-killing activity one of the patients seemed to forget his depression and was obviously less agitated than before. Another task in giving medications lead me to wonder about the time-consuming method of giving one at a time. Then I realized that this method was a safety measure in a situation where it would be inadvisable to carry a tray of medications from patient to patient.

Oct. 8: The films we saw today on psychiatric nursing and the instructor's interpretation of some of the patients' behavior helped me to understand better the reasons for modifying nursing care according to the needs of each patient.

On Ward 5 I assisted with shock therapy and observed the steady improvement of one of the patients who only last week had been resistive to dressing and taking food. Today he buttoned his own shirt, held his head up when I talked to him, and fed himself.

During the noon hour an elderly patient refused to eat the food served on his tray. When I urged him to eat he told me to stand in a corner of the room until his lawyer came. I left him to look after some of the other patients, returning later to encourage him to eat. With great dignity he reminded me of his instructions as though I had not properly understood them. Since this patient usually ate well it did not seem advisable to insist further on his eating at this time. I watched, however, when his supper tray was served; he ate as usual and seemed to have forgotten about the lawyer.

I learned a few things about two patients with whom I played checkers. One of them was able to concentrate throughout the whole game while the other patient's attention was easily distracted. Both of them, however, seemed to be equally appreciative of my playing with them. Some of the elderly patients in wheel chairs liked my bringing them water to drink in mugs since it was awkward for them to use the bubbler fountain.

Some Useful Ideas

Oct. 9: I got some ideas from the talk on occupational therapy that I hope to be able to use in my work with the patients here. Then I went about some of the routine activities concerned with medications, bathing, and charting. I stopped to speak to the patient who had avoided me last week, and although this time he did not walk away, he turned his head from side to side to avoid facing me. I wish I knew what to do for him.

Another overactive patient put a tremendous amount of energy into washing his bed and dresser and shining the mirror on the wall. He seemed pleased when I thanked him for doing it.

Oct. 10: We went over some nursing procedures in class today. They seemed involved, but then outlines always seem complicated to me until I see them in application. Later I assisted in the admission of a patient and was able to put some of the things I had learned into practice. A brief review of the written procedures helped me to fix the procedures more firmly in my mind for future need.

One of our patients wandered away from us this afternoon. Fortunately, he was located on a near-by ward. On his return the head nurse welcomed him warmly, saying that she was glad to have found the lost sheep. He laughed spontaneously at this, and I was pleased to see what I considered a healthy emotional response from a patient who had appeared to be a textbook picture of an impassive hebephrenic schizophrenic. His absence and our concern had created considerable tension, but I wondered if the intensity of our concerted emotion had not been a good thing for him after all.

Dissatisfied With Lecture

Oct. 11: The lecture today on personality development left me dissatisfied because it omitted the spiritual aspects and stressed the biological, even though the social aspects were acknowledged. This lack was further indicated later by the problem of a patient who confided some of his religious conflicts to me. In referring his problems to the head nurse I was told that a chaplain was already working with the physician in helping the patient identify the true nature of his difficulty. I was glad to know that the patient could receive the benefits of both the physician and chaplain and that my part as a nurse lay in giving him the assurance he evidently needed in accepting their counsel.

I like to think that the encouragement I gave a young man by telling him how well he had done in assisting with the task of putting the ward in order seemed to give him the incentive to help another patient with a jigsaw puzzle, something he had never done before of his own volition.

I wish that the ball players in the last game of the World Series could have seen the therapeutic values the game had for the patients who listened in on the radio account of the contest. The patient I had helped to admit yesterday sat apart from this group and as I walked over to speak to him I heard him say loudly to an attendant: "I know I did wrong. Why don't you punish me?" The attendant waited a moment and then calmly replied, "You are not here to be punished, Mr. Smith. You are here for treatment that should make you well." The words of this attendant and the tone of his voice quieted Mr. Smith.

Also sitting apart from the other patients was a young man who told me about how he was being tortured here. While I was listening to him a large box arrived from his home and I hoped that this would divert his morbid thoughts into more agreeable channels. But as he removed each article from the box he commented: "Why did they send me this? I can't figure it out." I was sorry to see how his ideas of persecution kept him from enjoying the obviously good things of the moment.

Next month more excerpts from this student's records will be presented.

As a result of the progress of medical science there are now three oral drugs available to diabetic patients. What they are, the types of patients benefiting from them, their dosages and contraindications are discussed here.

The ORAL HYPOGLYCEMIC AGENTS

IN 1957 tolbutamide, the first oral drug ready for use in diabetes therapy in the United States, was released by the Food and Drug Administration. The release of this oral medication climaxed almost two years of experimentation and clinical trial in the United States and Canada. The period of American study followed months of similar investigation in Europe, particularly in France and Germany.

Since 1957 two additional oral hypoglycemic agents have been released for prescription sale in the United States. Chlorpropamide became available for clinical use in November 1958, and the release of phenformin followed in March 1959. As yet no compound has been discovered that can completely replace insulin in all phases of diabetes therapy and with all diabetic patients. However, a start has been made in oral therapy and no doubt other agents with greater range of usage will appear as more is learned about the mode of action of insulin and the cause of the disease itself.

The study of hypoglycemic compounds has necessitated a tremendous amount of research which cannot fail to be of great benefit to students of diabetes. Because of the accelerated research during the past seven years Dr. Elliott P. Joslin has labeled the recent years "the experimental era" in diabetes.

The three oral medications now available for use with some diabetic patients are not any form of insulin; they are not true insulin substitutes, and do not act like insulin. The new drugs are classified as oral hypoglycemic agents—oral drugs that have the ability to lower and help stabilize the blood sugar level. It is recognized that although they can lower the blood sugar, these drugs lack certain desirable metabolic capabilities possessed only by insulin. Two of the current drugs, tolbutamide and chlorpropamide, are sulfonylurea compounds (sulfonamide derivatives) possessing no antibacterial properties. The third, and most recent—phenformin—is a biguanide compound (phenethylbiguanide) which is unrelated chemically to the sulfonylureas.

The Sulfonylurea Compounds

Tolbutamide, better known to nurses by its trade name of Orinase[1] and chlorpropamide, marketed under the trade name of Diabinese,[2] are sulfonylurea compounds and are closely related chemically. Both drugs possess the ability to lower the blood sugar in normal subjects and in some diabetic patients. Research has established that the sulfonylurea compounds are effective only when the pancreatic islet cells are apparently still capable of producing some natural insulin. Neither tolbutamide nor chlorpropamide will lower the blood sugar in the complete absence of pancreatic beta cells.

The sulfonylureas are believed to lower the blood sugar level by stimulating the islet cells of the pancreas to secrete and/or release more insulin. A second mode of action is thought to be the inhibition of the release of glucose from the liver.

[1]A product of The Upjohn Company.

[2]A product of Pfizer Laboratories, Division of Chas. Pfizer & Company.

Type of Patients

Patients who may respond to treatment with the sulfonylurea compounds are usually middle-aged and elderly persons with mild diabetes, the onset of which occurred after age 40, and whose insulin requirements are 30 units, or less, daily. Diabetes with onset after age 40 is usually stable and not given to frequent fluctuations between high and low blood sugar values.

Tolbutamide has been available for clinical use for about two years; chlorpropamide, for less than a year. Some patients with adult-onset diabetes may not respond to either of these drugs. An occasional patient may be responsive to a sulfonylurea for a period of time and then develop lack of responsiveness to the drug. This is known as secondary failure, as differentiated from primary failure which means that the patient did not respond to the drug at the start of treatment.

Tolbutamide and chlorpropamide are contraindicated in the treatment of juvenile-type diabetes and severe "brittle" adult-onset diabetes. These drugs are also contraindicated in the treatment of the long-term, and thin acidosis-prone diabetic patients. These types of patients usually have fairly high insulin requirements. The sulfonylureas are contraindicated in the treatment of any diabetic patient with hepatic dysfunction, gangrene, Raynaud's disease, hyperfunctioning thyroid, and renal pathology. The sulfonylureas are of no value in the treatment of acidosis and coma. As a rule, re-

by MARGUERITE M. MARTIN, R.N.

sumption of insulin therapy is temporarily necessary during times of stress such as severe acute illness, infection, gangrene, and recovery from major surgery and severe injury. It is possible to attain adequate control for some mild diabetic patients with diet alone. Planned weight reduction for the obese diabetic usually results in increased carbohydrate tolerance so that adequate maintenance diet is sometimes possible without the need for exogenous insulin. Authorities stress that patients who do not need exogenous insulin do not need oral hypoglycemic agents either.

Possible Side Effects

Side effects seen occasionally in patients being treated with a sulfonylurea compound include mild skin rashes of allergic origin and such gastrointestinal disturbances as loss of appetite, heartburn, nausea, and rare instances of vomiting. It is reported that these symptoms usually have been mild and transitory with most patients when the drugs were administered in recommended dosage. However, the nurse should report to the physician any unusual complaint or development.

Important toxic effects have rarely been seen in patients receiving tolbutamide, but with those taking chlorpropamide a quite definite, although still low, incidence of significant side effects has been reported, particularly when overly large doses were given during the early days of clinical trial of this preparation. These toxic effects included severe dermatitis, jaundice, and prolonged hypoglycemia. The appearance of jaundice indicates liver damage and demands immediate discontinuance of the drug.

Hypoglycemia may occur in patients taking chlorpropamide if the dose of the compound is too great, since chlorpropamide is excreted from the body slowly and may accumulate within the body. Proper selection of patients and attention to dosage of chlorpropamide minimize the possibility of hypoglycemia. The symptoms of this condition are the same as that of hypoglycemia due to any cause and include sweating, nervousness, tremor, headache, nausea, weakness, and mental confusion. Unconsciousness may follow if the hypoglycemia is not recognized promptly and treated adequately.

Dosages

Tolbutamide (Orinase) is supplied in 0.5 Gm. scored tablets. The usual daily maintenance dosage ranges from 0.5 Gm. to 2 Gm., although slightly higher doses may be used temporarily at the start of treatment. The drug is administered once a day before breakfast or in divided doses before meals. Authorities state that the maximum daily maintenance dosage should not exceed 2 Gm.; it is said that most patients require no more than 1 Gm. daily.

The other sulfonylurea, chlorpropamide (Diabinese), is supplied in scored tablets of 0.25 Gm. (250 mg.) and 0.1 Gm. (100 mg.). The usual maintenance dosage of Diabinese is 0.5 Gm., or less, administered once daily before breakfast. Some patients are adequately controlled with 0.25 Gm. daily, and some elderly patients are said to need no more than 0.1 Gm. daily. The drug can be given in divided doses if the patient shows gastrointestinal intolerance. Pfizer Laboratories caution that a daily maintenance dosage exceeding 1 Gm. should be avoided with all patients.

Dosages of both tolbutamide and chlorpropamide may need adjusting from time to time, depending upon alterations in the diet, variation in physical activity, general physical condition, and possibly other factors. Patients being treated with hypoglycemic agents need check-ups at regular intervals, as determined by their physicians. At such times urinalyses, blood sugar determinations, sulfonamide blood levels, liver studies, and any other laboratory studies the physician deems necessary, can be made.

Trial-Transition Periods

Because not all patients are responsive to treatment with oral hypoglycemic agents usually applicable to their age group, trial or transition periods up to seven days are necessary. During this time the patient is observed closely for side effects of the drug, and frequent evaluations of the blood sugar and examinations of the urine are made. Authorities recommend gradual discontinuance of insulin, unless the dosage is very low, and caution against abrupt cessation of insulin therapy. Satisfactory reduction in the blood sugar, disappearance of sugar from the urine, and improvement in other diabetic symptoms indicate responsiveness to the oral drug. Continued high blood sugar level, sugar and ketone bodies in the urine, and the continuation of other diabetic symptoms indicate that the patient is not responsive to treatment with the drug being used. It is important to remember that diet is the cornerstone of diabetes therapy. No oral agent will be effective unless a diet reduced in carbohydrate and calories is meticulously and consistently followed.

The Biguanide Compound

Phenformin is a biguanide compound (phenethylbiguanide) known best by its trade or proprietary name of DBI.[3] Phenformin is not a sulfonamide derivative and is, therefore, unrelated to tolbutamide and chlorpropamide in chemical structure and mode of action. Although not released until March 1959, DBI has been the subject of approximately three years of study and clinical trial.

The mode of action of DBI has not yet been definitely established but the compound is thought to act by inhibiting certain oxidative enzymes. It does not increase the production or release of insulin by the islet cells. It is interesting to note that although DBI has the ability to lower the blood sugar in many diabetic persons, it has very little effect on the blood sugar level of nondiabetic individuals. The sulfonylureas lower the blood sugar in nondiabetic subjects. This difference in the two types of hypoglycemic compounds points out the variance in modes of action.

DBI can be used alone to achieve results similar to those obtained with the sulfonylurea compounds in the treatment of the less severe diabetics with onset in adult life. At the present time, however, it is most frequently given in conjunction with insulin in the treatment of the more severe, labile diabetics. It is said to be of greatest value in attempts to stabilize the course of "brittle" or problem diabetics, juvenile as well as adult, who have been difficult to control

[3] A product of U.S. Vitamin and Pharmaceutical Corp.

smoothly with insulin and diet.

"Brittle" diabetics are those who fluctuate between high and low blood sugar values and are, therefore, more prone to both insulin reactions and diabetic acidosis. Clinical trials have demonstrated that it has been possible to achieve a smoother course of management for some problem cases and to reduce the insulin dosage in varying amounts by giving DBI as an adjunct to insulin therapy. As is the case with the sulfonylureas—and insulin also—a calculated diet is the foundation upon which all treatment must be built.

Contraindications

Authorities agree that DBI, like the other oral hypoglycemic agents, should not be used with children or the more severe adult-onset patients who are effectively and smoothly controlled with insulin and diet. If adequate control can be attained by diet alone, no oral hypoglycemic agent is necessary. Insulin therapy is necessary during the acute complications of diabetes such as acidosis, coma, gangrene, and infection, as well as during times of major surgery.

The possible side effects of DBI include anorexia, nausea, vomiting, and sometimes diarrhea; they are seen in most patients when dosages of the drug greater than 200 mg., daily, are given. These symptoms disappear when the drug is stopped or the dosage lowered. A metallic or bitter taste in the mouth frequently forewarns of overdosage or gastrointestinal intolerance. No lasting or systemic toxic effects have been noted after DBI usage.

DBI is supplied in 25 mg. scored tablets. The usual daily maintenance dosage of DBI ranges from 50 to 150 mg., administered orally with meals in divided doses three or four times a day according to the needs of the patient. Authorities stress that the maintenance dosage needs slow and careful determination to avoid gastrointestinal intolerance. Low doses graduated upward are recommended. The practical maximum daily maintenance dosage is said to be 150 to 200 mg.

A trial and dosage adjustment period is recommended during which time the dosage of DBI is adjusted to the requirements of the individual diabetic patient. During this trial period the patient is under the close supervision of his physician. Blood sugar determinations are made at regular intervals, and frequent examinations of the urine for sugar and acetone are performed. If gastrointestinal side effects persist despite careful dosage prescription, or if there is a worsening of the diabetic condition, return to full insulin therapy is indicated.

The Nurse's Role

It is necessary for nurses to possess adequate knowledge of all new drugs in general use. This need seems to be especially true in the case of the oral hypoglycemic agents because of the interest which their discovery has generated. Nurses are questioned about the new oral medications for diabetes not only by patients, but by relatives of diabetics and the general public as well. Information given should be based upon the reports of scientists and clinicians who have studied the compounds, and not on personal opinion. The oral hypoglycemic agents have proved valuable, yet it is generally agreed that it may still be some time before the efficacy and safety of the compounds for long-term usage have been definitely established.

Needless to say, nurses should be familiar with possible side effects of the oral hypoglycemic drugs so that when they occur, they will be able to call them promptly to the physician's attention. Nurses need also to be constantly alert for signs of poor diabetic control in order that full insulin therapy may be resumed quickly if necessary. Signs of hypoglycemic shock must be quickly recognized and treated.

Nurses must know that simply because a diabetic person falls into a certain age group or patient type does not necessarily indicate that he will respond to treatment with the oral agent usually applicable to his group.

It must be remembered that it is only the treatment which has been simplified for some patients. The disease itself remains the same with all its premature degenerative possibilities when control is inadequate. There is the danger that there will be a lessening of realization of the need to teach the diabetic patient rules of self-care. But it must be remembered that oral therapy has not altered the fundamental truths relative to the care of diabetic patients. The nurse's chief role in oral therapy, therefore, is clearly evident. It is that of teacher of the diabetic patient and his family. Instruction in the following is as important as ever for all diabetic patients regardless of how the ailment is being treated!

1. the nature of diabetes
2. daily examination of the urine
3. the importance of diet
4. how to exchange food items for others of equal value
5. the different types of insulin and proper technique for insulin administration
6. how to recognize possible side effects of the oral agents, and the need to report them
7. the importance of periodic check-ups
8. the importance of regulated exercise
9. how to care for one's self during an acute illness at home
10. how to recognize and treat hypoglycemia
11. rules of foot care
12. good personal hygiene; the avoidance of infection

The diabetic patient for whom none of the present oral hypoglycemic agents is applicable can be cheered by the news that a great amount of research is being done in the field of diabetes. The future looks very bright indeed for persons afflicted with this metabolic disorder.

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Legal Facts . . .

(*continued from page* 18)

to such a procedure?

The attorney said that when the jury wondered why the laboratory had raised no question when the two specimens arrived with a pathology sheet that described two others as well, they might conclude that there was too much uncertainty as to what really happened to justify charging the operating room nurse with responsibility for the loss of the specimens.

The attorney, however, pointed out that it would be unrealistic to say that the nurse's failure to conform to the procedure which required her to verify the specimens with the surgeon would not prejudice her defense in case of suit. By the nurse's insistence upon substituting her personal judgment for the instructions of those charged with supervision of her professional activities, she would have created an unfortunate effect upon the average member of a jury, the attorney stated.

But he added that from a practical point of view, the prime candidate for the lawsuit by the patient would be the surgeon. Until relatively recently the courts have tended to hold the surgeon responsible only for his own failures, not those of the surgical resident who may assist him or of the nurse-members of the surgical team.

Lately, however, the law has recognized that normally the patient relies upon the surgeon to see that he has proper assistance and equipment for the operation he has recommended and has undertaken to perform, and that within the confines of the operating room, while the surgery is in progress, the surgeon exercises relatively complete authority over those who participate with him in the operation.

The attorney stated that usually, under the law, with authority comes responsibility. The modern trend, he said, was to declare that, so far as the patient was concerned, the surgeon was responsible not only for his own negligence, but also for that of all those who are subject to his orders in the operating room with respect to their activities in connection with the progress of the operation. In view of this the attorney said that the patient would be far wiser in the present case to direct her suit against the surgeon, and the attorney would expect her to do so. In such event, she would not have to prove whether the nurse or surgeon was actually responsible for the loss of the specimens since the surgeon was legally responsible for the nurse's negligence as well as his own, even though he did not employ her, pay her, or even select her to participate in the operation with him.

Surgeon May Seek Reimbursement

"However," the attorney continued, "if the surgeon is held liable to the patient, and if the surgeon can thereafter show that it was because of your fault that he was subjected to this liability, he may demand reimbursement from you." He explained that to do this the physician would have to show just how Miss Evans was at fault, in the same way as the patient would have to, if she brought claim directly against the nurse. The most the court could award against her, whether the patient or the surgeon sued, would be a judgment or an order to pay money.

The attorney stated: "Unless operating room nurses begin to be paid something reasonably commensurate with the skills they are required to have, and the professional responsibility they assume, a judgment against an O.R. nurse may be worth little to the person to whom it is awarded. Nevertheless, from the point of view of the nurse, it is something worth avoiding, for it impairs her credit standing; it may complicate or prevent her obtaining a mortgage for the purchase of a home, and may evaporate her savings or any inheritance she may receive.

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Miss Evans said nothing for the better part of a minute. Then, with the quiet sincerity that would help her before any jury, she said, "You know, as I sat here and listened to you, and wondered how a simple little question like I asked you could justify so lengthy a reply, I began, at first, to feel resentment that the law should impose such great legal responsibilities upon anyone as inadequately compensated, financially, for assuming responsibilities nurses do."

She added that she had come to realize that the nurse's legal responsibilities must be measured in terms of the effect of her services upon the patient, and not in terms of what she may be paid for rendering them, and that, in the final analysis, the standard of conduct prescribed by the law is only that which her own profession has prescribed for itself.

"Indeed," she said, "the law is more tolerant of my deficiencies than I am of my own, since the law holds me only to the degree of skill and care possessed and applied by the average member of our profession, whereas I consider myself above average in those respects." She declared that she had learned that although the law would not expect her to pay damages unless her fault had caused the damages, she was neither astute nor professional when she arbitrarily substituted her personal judgment for the definitive instructions of her superiors. "In the future," she said, "while I shall not hesitate to express myself to those superiors as to why the instructions should be modified, I shall follow the instructions until they are modified."

Advances and Trends in Drug Therapy

(*continued from page* 20)

DBI produces a smooth and gradual lowering of blood sugar in both fed and fasted animals and humans, beginning almost immediately after administration and reaching a maximum hypoglycemia between the fifth and sixth hours. As the effect of DBI disappears, the subsequent rise in blood sugar is somewhat more rapid than was the decline; usually by the tenth hour pre-DBI levels of glycemia are achieved.

Although the mechanism of DBI's action has not yet been established, it appears that DBI may act by supplementing the effect of insulin upon the peripheral utilization of glucose. This action may involve an increase in the peripheral disappearance of glucose via the alternative and evidently physiologic anaerobic pathway, with the peripheral formation of pyruvate and lactate. These intermediary metabolic fuels may then be utilized at as yet unidentified sites. It is clear that no sustained or profound alteration in oxidative metabolism accompanies the continued use of DBI, and the suggested mechanism may be considered physiologic.

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NURSING WORLD Reports

(*continued from page 7*)

of Nursing in Ann Arbor, Mich.

A graduate of Union Hospital School of Nursing, Fall River, Mass., Miss Marsden holds a B.S. in Nursing Education from the University of Minnesota School of Nursing and a master's degree from Columbia University, New York City. This year she received a certificate from the William Alanson White Institute of Psychiatry in New York City.

During her nursing career Miss Marsden has served as staff nurse at Union Hospital, Fall River, Mass.; supervisor at Newberry (Mich.) State Hospital; director of patient care at Lapeer (Mich.) State Hospital; and as assistant director of Kings Park (N. Y.) State Hospital School of Nursing. She has been on the faculty of Adelphi College since 1957.

N.L.N. Program Director

Frances K. Peterson has been named to succeed Mildred E. Schwier as director of the National League for Nursing's Department of Diploma and Associate Degree Programs. Miss Schwier will become director of nursing at Providence Hospital, Providence, R. I., on Nov. 1.

Miss Peterson, who has been assistant director of the department since 1952, had previously held a variety of positions in hospital nursing, public health nursing, and nursing education.

A graduate of St. Vincent's Hospital School of Nursing, New York City, Miss Peterson holds a bachelor's degree from St. John's University, New York City, and a master's degree from the Catholic University of America, Washington, D.C.

Florence Taylor Honored

Florence Taylor, manager of the dispensary of Dun & Bradstreet, Inc., New York City, recently received the company's Whiteside Award for "exceptionally outstanding and sustained contributions in the interest of the company."

In addition to a citation in which she was praised for doing "a truly professional job taking care of employees who are sick or have had accidents, creating interest in sound health practices, recommending doctors and specialists . . .," Miss Taylor received a brooch designed by Tiffany's of New York, a gift check, and two extra weeks of vacation with pay.

Miss Taylor, a graduate of The Philadelphia General Hospital School of Nursing in Philadelphia, Pa., has been manager of Dun & Bradstreet's dispensary since 1943.

The Whiteside Award, the company's highest award, was established in 1953 in honor of A. D. Whiteside, president of Dun & Bradstreet, Inc., between 1931 and 1952, when he retired.

Name NSNA Executive Director

Agnes B. Thompson recently became executive director of the Nebraska State Nurses' Association. She had been executive secretary and counselor of the South Dakota Nurses Association and has also been editor of *South Dakota Nurse*. A graduate of the Swedish Hospital School of Nursing in Minneapolis, Minn., she holds a bachelor's degree from Sioux Falls College and has taken advanced work at several universities.

Assistant Director Named

Isadore Maislin, a registered nurse, has been named assistant director of Mount Sinai Hospital of Greater Miami. He was previously first assistant administrator at the Albert Einstein Medical Center of Philadelphia, Pa.

Mr. Maislin is a graduate of the Brooklyn (New York) State Hospital School of Nursing and studied business and hospital administration at Sampson College and Columbia University.

New Faculty

Western Reserve University, Cleveland, Ohio, recently announced five new appointments to its nursing faculty.

Named as associate professor of nursing was Wilma A. Minniear. Edith F. Lindstrom was appointed assistant professor of public health nursing. New instructors are Elsie B. Kocher, public health nursing; Gladys A. Larowe, surgical nursing; and Dorothy M. Schwobel, rehabilitative nursing.

Major Treacy Appointed

Maj. Jeanne M. Treacy, Army Nurse Corps, formerly supervisor on the nursing service at Walter Reed Medical Center in Washington, D.C., was recently appointed to the Office of The Surgeon General, Washington, D.C., as assignment officer in the Army Nurse Corps Section of the Personnel and Training Division. She is now responsible for the assignment and reassignment of Army Nurse Corps officers throughout the world.

Major Treacy, a graduate of the Osteopathic Hospital in Philadelphia, Pa., joined the Army Nurse Corps in 1941. Since that time she has served in the European Theater of Operations (during World War II), studied for two years at Michigan State University in East Lansing, Mich., and served in various nursing assignments in the Fourth U. S. Army area and in Okinawa. She graduated last year from Columbia University, New York City.

The Book Shelf

(*continued from page 23*)

lems of Dental Health; Chapter 8. Communicable Diseases; Chapter 9. Problems of the Digestive System; Chapter 10. Heart Problems in the School Child; Chapter 11, Health Problems of the Skin; Chapter 12; Epilepsy; Chapter 13. Headaches; Chapter 14. Juvenile Diabetes Mellitus; Chapter 15. The Crippled Child; Chapter 16. Emotional Development.

Part II is headed The School Health Program. In it are Chapter 17. Organization and Administration of the School Health Program; Chapter 18. Healthful School Living; Chapter 19. School Health Services; Chapter 20. School Health Education; Chapter 21. Evaluation of the School Health Program, and an appendix.

This book is excellent in its approach to subject matter and in its comprehensiveness. The material is well organized and easy to follow and understand. This text should be required reading for all personnel concerned with school health.

Drug Therapy

(*continued from page 22*)

PRECAUTIONS: The original prediction that NPH would meet the needs of a majority of juvenile diabetics has had to be tempered. This may be related to the fact that some of the initial trials of the insulin which indicated a high degree of effectiveness were made at a summer camp for diabetics. The attempt to control these children on NPH during the school year resulted in severe nocturnal shocks reminiscent of those seen when protamine zinc is used alone. Presumably, during the summer the exercise in camp helped control postprandial glycemia and glycosuria. This limitation of NPH insulin however, can be overcome by mixing it with regular insulin in any proportion desired since it does not have an excess of a combining group.

Clinical Assignment Pattern

(*continued from page* 16)

struction and an eight-week summer session. Thus the class can be divided into four groups for regular rotations and divided in half for vacations. A type of "intersession" instruction and practice would need to be planned for the four summer weeks. Adjustments to meet the prevailing twelve-week requirements in pediatrics, obstetrics, and psychiatric nursing would be necessary. It is good that rigid requirements concerning days and weeks are giving way to more permissive regulations, with performance rather than time the deciding factor.

The Trimester Pattern. The trimester plan provides 3 sixteen-week periods, with a four-week vacation each year, or variations as suggested above. The class would be divided into three parts.

The Semester Pattern. In this pattern there are 2 eighteen-week periods in the school year, and a sixteen-week summer. The latter would break down into a four-week vacation and a twelve-week clinical assignment. The summer plan suggested under the first quarterly arrangement (4 thirteen-week periods) can be used here, with the class divided into four rather than three sections.

Concurrency

To achieve concurrency, the formal classes, clinical conferences (ward classes), and clinical experiences established for each functional unit must be offered each group of students when they are ready for them. In addition, experiences outside the hospital which round out or increase the scope of understanding in the area under study should be provided. These experiences include special clinics, in or outside the hospital; home visits; excursions; and visits to community agencies and special or regular schools.

This is particularly important at a time when the concept of continuing health care is gaining increased acceptance. Students need a broader understanding and knowledge than they can receive in just the hospital and classroom. Not only should contributory experiences be set up to focus directly on the learning area, but full utilization should be assured by orientation, guidance or direction, and evaluation.

Thus, if a quarterly pattern is followed and a class is divided into four parts, the clinical curriculum, together with related and contributory subject matter, must be planned and taught four times each year.

A clinical assignment pattern of the type suggested presents the following problems:

► Hospital coverage. If the program is truly educational the contribution made to the nursing service load by students is incidental to their learning needs. Realism is required here, however, and if service requirements are a factor they should be faced squarely and the best possible adjustment made.

► Faculty vacations.

► Faculty load, especially with concurrent teaching and practice.

► Budget. Repeating the clinical curriculum each period requires more teachers, more time in class and conference rooms, more hours on the hospital divisions, and more teaching space. In addition, there is the well-established trend to reduce the number of teaching hours carried by doctors, and thereby to add to the faculty's load.

► Sequences. Blocked rotations make it impossible to plan for each student to have a given clinical experience before another specified clinical experience, e.g., obstetrics preceding pediatrics. It is possible, however, for a class of students to have the same experiences within the same year.

Whatever the rotation pattern, organization of nursing instruction and practice into definitely scheduled units will facilitate curricular administration. It will enable faculty to establish content, time, and setting for each segment of a student's clinical practice. Furthermore it allows each teacher to plan rotations, special assignments, field trips, and instruction within her own unit.

When the rotation pattern and clinical teaching are synchronized the program becomes a sequence of significant and related nursing experiences. Students have opportunity to learn and demonstrate their ability in each area. Blind spots and duplications in instruction and practice are kept to a minimum, specific content is covered, and performance and progress can be regularly evaluated. Such a plan takes nursing one step further on the path to sound educational procedure.

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